American MILK REVIEW

AMERICAN MILK REVIEW BUTTER REVIEW EGG & POULTRY REVIEW

CIRCULATION OVER 14,500 MILK PLANTS

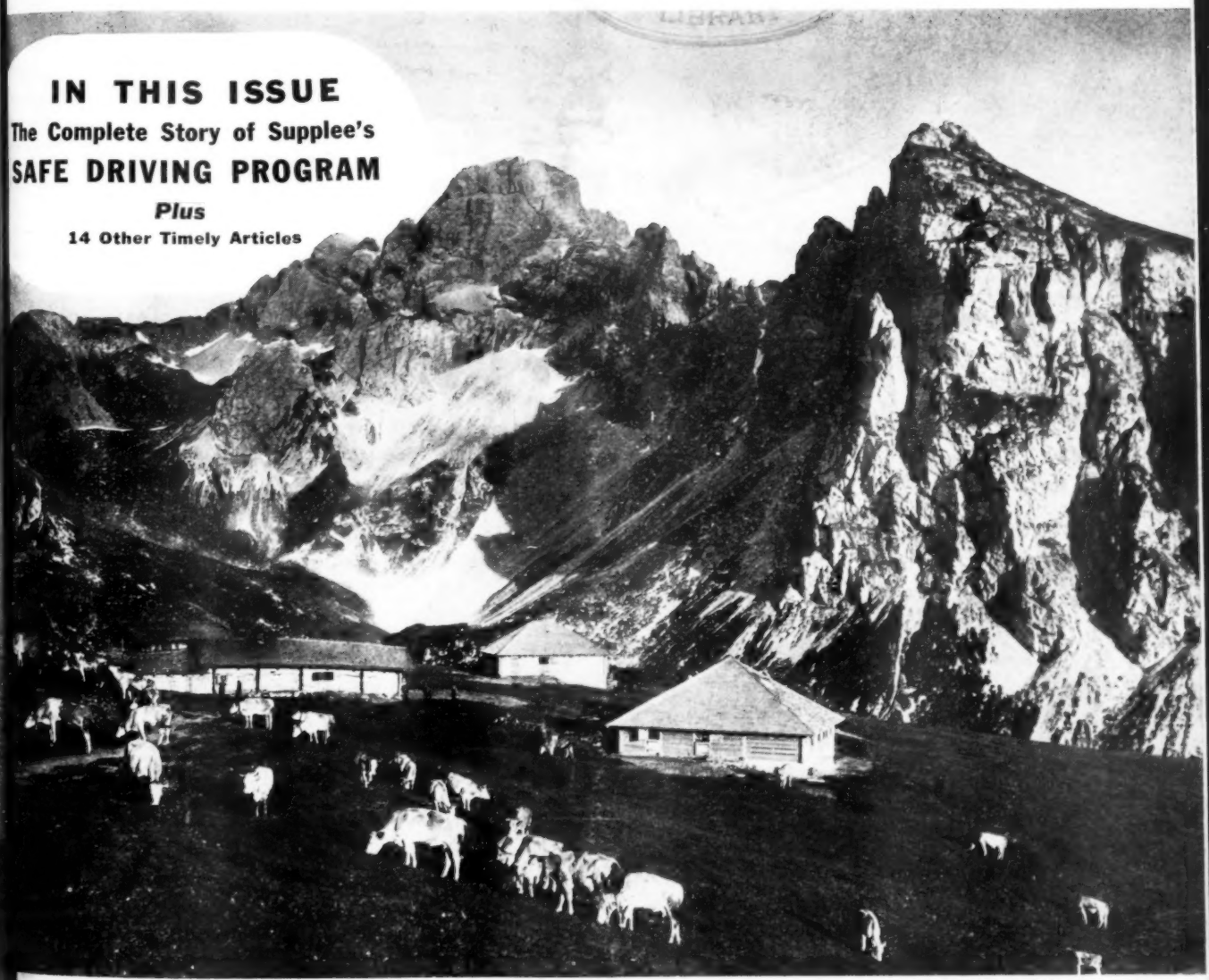
IN THIS ISSUE

The Complete Story of Supplee's

SAFE DRIVING PROGRAM

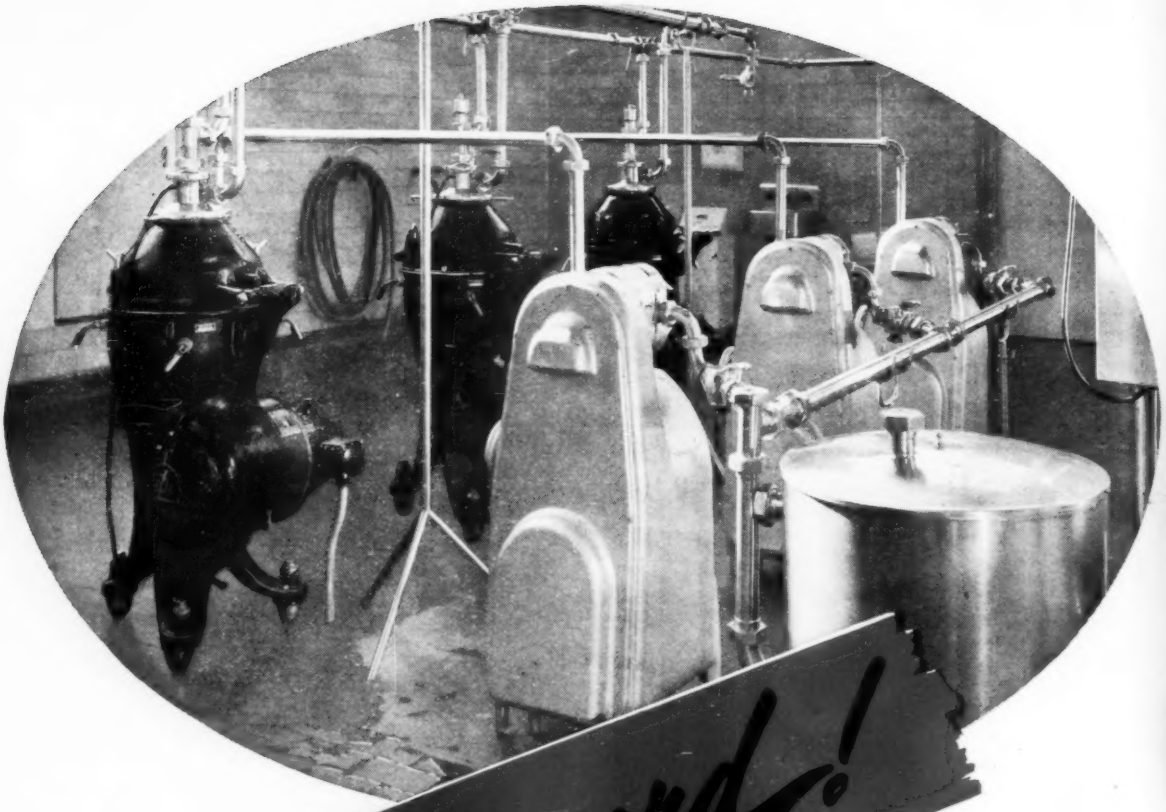
Plus

14 Other Timely Articles



PHOTOGRAPH BY G. MULLER.

THE SUN NEVER SETS ON THE DAIRY COW .



Last word!

The plant, equipment and high sanitary standards of the Chippewa County Co-op. Assn. at Bloomer, Wis., represent the *last word* in milk processing. And naturally...the *last word* in equipment includes three De Laval "Air-Tight" Separators as shown in the photograph.

Our experience gained in the building of many thousands of De Laval "Air-Tights" down through the years and the proved performance which they represent is the very best assurance available to the man responsible for plant equipment and its operating performance that he will—

"Be Right - with a De Laval 'AIR-TIGHT'"

De Laval "AIR-TIGHT" CREAM SEPARATORS and MILK CLARIFIERS

...STAINLESS STEEL EQUIPPED!

THE DE LAVAL SEPARATOR COMPANY
165 Broadway, New York 6 • 427 Randolph St., Chicago 6
DE LAVAL PACIFIC CO. • 61 Beale St., San Francisco 5
THE DE LAVAL COMPANY, Limited
Peterborough, Ontario

XUM

This IS COSTING YOU MONEY!

BOTTLED MILK is to be drunk, not worn. Squirts can't happen with Seal-Kap. There's constant bottle-lip protection with one-piece Seal-Kap—for as long as there's milk in the bottle. A twist and it's off, a snap and it's on. No wonder the missus likes it!

Customer satisfaction is only the happy *ending* of the Seal-Kap story. In your Dairy, it takes only *one* machine to press in the Seal-Kap and protect the bottle lip. This means simpler operation, more efficiency, less maintenance, and reduced manpower. All add materially to cost reduction. Seal-Kap speed keeps up with the fastest filler, too.

Write today and let us fill your Seal-Kap needs.

The news about the new single-operation Seal-Hood, the long-skirted closure combined with a seal, is that it's now being double-checked with field tests and will soon be generally available. The Seal-Hood machine, like Seal-Kap, can be used with any standard filler. Write for complete information.

AMERICAN SEAL-KAP CORPORATION, 11-05 44TH DRIVE, LONG ISLAND CITY 1, N. Y.

Seal-Hoods AND *Seal-Kaps* PROTECT TO THE LAST DROP IN THE BOTTLE

There's a new day dawning in MILK BOTTLE CAPS....

For a long time people thought that a milk bottle just had to have a wide neck opening. *Most* people, that is. But even before World War II, Crown Research Engineers were experimenting with milk bottles that could be sealed with a smaller cover cap. When the war was over, Crown Engineers were ready with the Dacro P-38. By taking into consideration all the factors involved, they designed a Dacro Bottle which is sealed with a 38 mm. cap and which meets every requirement of filling, handling and pouring.

PROVED PERFORMANCE

Today the Dacro P-38 is in use in dairy plants in various parts of the country. Many more installations are scheduled in the months just ahead. Two years of actual operation have definitely proved two things about the Dacro P-38:

1. It is more than satisfactory in actual use.
2. It saves money.

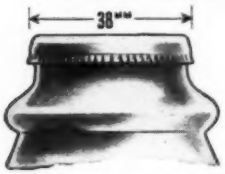
Clearly here is a new trend in milk bottling practice. With Dacro P-38 you save money by using the smallest practical cover cap. With Dacro, you also have a capping system that is engineered for high-speed bottling and smooth, trouble-free operation. Dacro P-38 has many features to interest the cost conscious dairy operator. Why not send for a Dacro Representative and get *all the facts*?

CROWN CORK & SEAL COMPANY

Dacro Division • Baltimore 3, Maryland

Reduce your

THE SMALLER DIAMETER

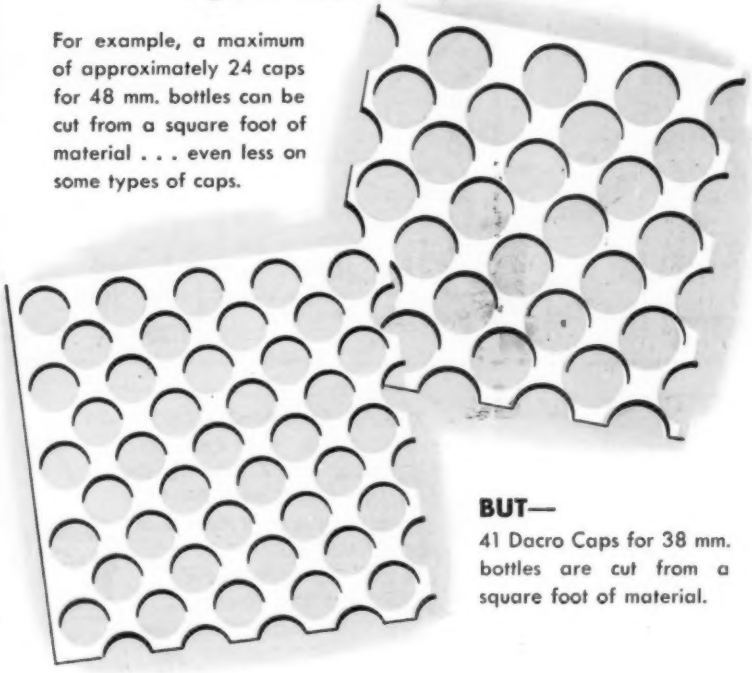


of the Dacro P-38 means that this cap requires less material to make and is therefore lower in cost. Why pay for caps which are larger than needed to do a satisfactory sealing job?

THE SAVING IS YOURS

Figure it out for yourself—

For example, a maximum of approximately 24 caps for 48 mm. bottles can be cut from a square foot of material . . . even less on some types of caps.



BUT—
41 Dacro Caps for 38 mm. bottles are cut from a square foot of material.

WITH DACRO P-38 YOU GET AT LEAST 17 MORE CAPS FROM EACH SQUARE FOOT OF MATERIAL

Bottling Costs with DACRO P-38

DACRO P-45

Development of the Dacro P-38 brought with it a number of improvements in the Dacro Capping System. The Dacro P-45 enables present Dacro users to enjoy the operating advantages of the new pre-formed cap until they are in a position to make the change to the Dacro P-38.

COLD FACTS on THATCHER T-SQUARES*

WHAT MAKES YOU THINK T-SQUARE BOTTLES WILL SOLVE MY COLD ROOM PROBLEM?
BECAUSE I'VE SEEN THE RESULTS IN ACTUAL OPERATION. LET ME SHOW YOU...
FOR ONE THING – 3 T-SQUARE CASES WILL STACK IN THE SPACE NOW USED FOR ONLY 2 OF THE OLD STYLE — THAT MEANS 50% MORE SPACE IN YOUR COLD ROOM WITHOUT ANY CONSTRUCTION COSTS.
THEN THE LIGHTER, SMALLER T-SQUARE CASES MAKE STACKING WORK FASTER AND EASIER ... SO NATURALLY EMPLOYEES PREFER T-SQUARES
THERE IS ALSO A SAVING ON ICING COSTS. YOU SEE, WITH T-SQUARE BOTTLES AND CASES THE ICE STAYS ON TOP AND DOESN'T MELT AS FAST; LESS ICE IS NECESSARY TO COVER THE SMALLER AREA AND COMPACT NECKS OF A CASE OF T-SQUARES

*Registered U. S. Patent Office

"I didn't believe it until I saw the results with my own eyes! T-Squares do actually gain 50% more space in the cold room, make stacking work faster and easier, and save on icing costs. You, too, can have all the advantages of Thatcher T-Square milk bottles. Do as I did, call the Thatcher Representative in your area."

THATCHER GLASS

MANUFACTURING COMPANY, INC.,
ELMIRA, NEW YORK

American MILK REVIEW

VOLUME 9 - - OCTOBER 1947 - - NUMBER 10

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The Robert Richter Hotel, headquarters for Dairy Industry Supply Association during the convention

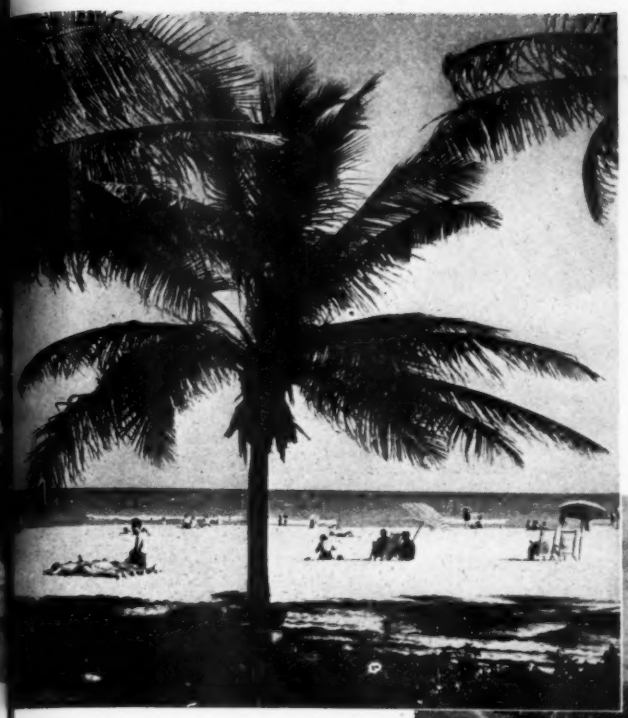
Waterskiers towed by motorboats are one part of the Miami setting

- - MIAM E

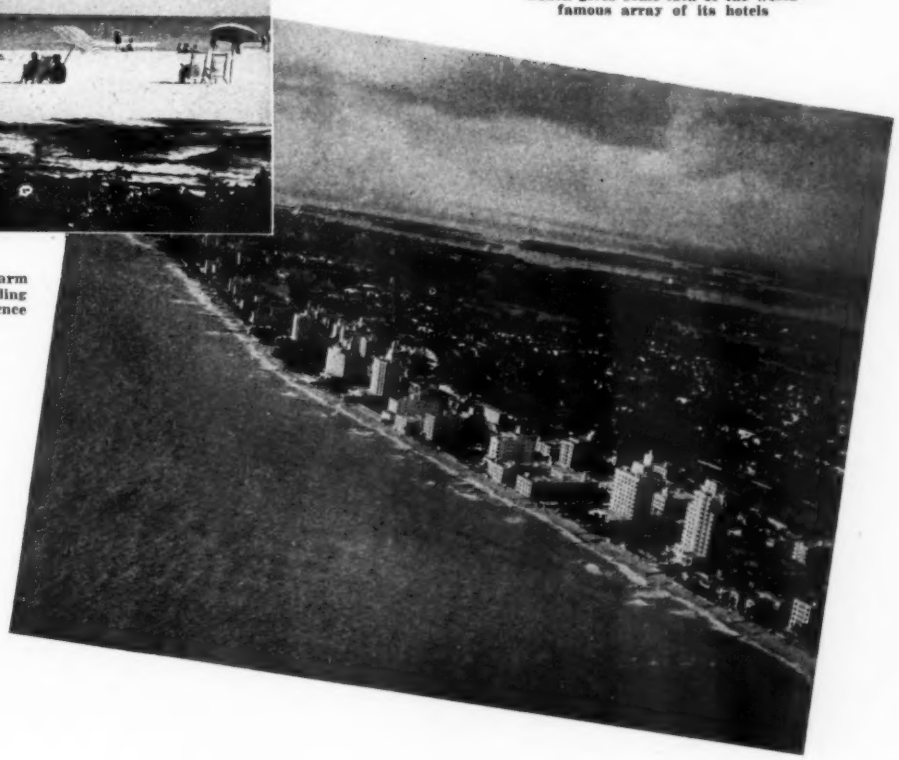
THE CELEBRATED gunner of the Walloping Window Blind who "fired salutes with the Captain's boots in the teeth of the booming gale" has nothing on officials for the grand dairy week at Miami Beach October 26-November 1. Despite the worst hurricane in 20 years plans are going ahead under a full head of steam for the record breaking meetings scheduled by four of the world's outstanding dairy organizations with the prospect of record attendance.

Cooperating in a healthy fashion yet maintaining their own individuality, Milk Industry Foundation, International Association of Ice Cream Manufacturers, American Dairy Science Association, and Dairy Industries Society International will hold either annual or special meetings at the Florida resort during the gala convention week.

Outstanding speakers, including the Under Secretary of Commerce as well as many prominent dairymen, and dairy



Lights and shadows on the warm beach sand will vie with outstanding speakers for the delegate's presence



This fine panoramic view of Miami Beach gives some idea of the world-famous array of its hotels

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REVIEW

ientists, will participate in the seven day conclave. Panel iscussions, lectures, motion pictures, informal get-togethers, rums, and "information trading posts" will be employed to isseminate a maximum amount of information among the dustry representatives in attendance.

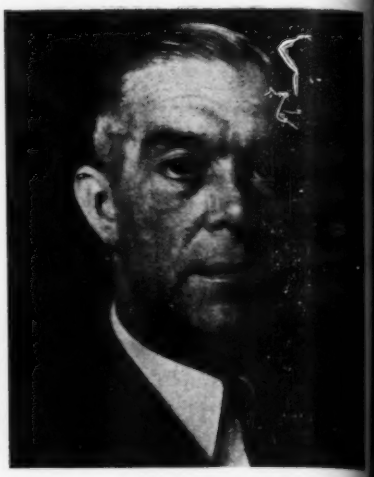
Darling of the four way convention will be the Dairy dustries Society International. Meeting for the first time its brief year of existence, DISI will bring to Miami distinguished representatives of the industry from 30 nations. DISA, the parent society, will maintain a stand-by status at the Convention.

The International organization came into existence last year when more than 22,000 persons from some 25 different countries identified with dairy enterprises were registered in Atlantic City. These people were delegates to conventions of the Milk Industry Foundation, International Association of

XUM

Francisco de la Fuente—Cuba

Alphonso Herrera—Columbia

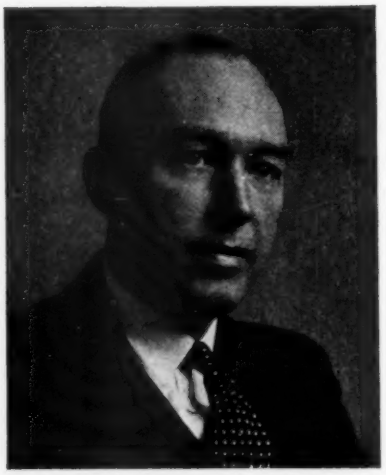


Peter K. MacKenzie—England

Ice Cream Manufacturers, International Association of Milk Sanitarians, and National Association of Retail Ice Cream Manufacturers, or as qualified visitors to the International Dairy Industries Exposition then in progress and under the sponsorship of Dairy Industries Supply Association.

Under the astute leadership of President Alfonso Herrera of Columbia and the active guidance of Roberts Everett, Managing Director, the society has accomplished much in its first year. Twenty committees composed of men from the world's leading dairy countries have been doing remarkable work in the fields of area development, consumer education, standard terminology, and various technical problems.

Miami Beach officials forecast that the October meeting will find in the city the largest number of visiting industrialists it has ever welcomed.



W. Frank Jones—Canada

Mr. Herrera and Mr. Jones are President and Vice-president of DISI respectively. Mr. de la Fuente and Mr. McKenzie are directors.

DISI's smaller sessions will not conflict with those of the larger IAICM and MIF, whose memberships are predominantly drawn from the United States. DISI members from all over the world will have an opportunity, however, to mingle socially and to exchange experiences with these representatively successful North American dairy enterprisers and also with the equippers and suppliers represented in the membership of DISA.

Members of the society, many of them acknowledged experts in varied phases of dairy progress, have carried its activities to 30 countries, with participation by dairy farmers, dairy processors and manufacturers, equippers and suppliers, exporters and importors, trade associations, public officials, educators and students.

Agenda

The Miami Beach program includes observation of the Students' International Contest in Judging Dairy Products, sponsored by Dairy Industries Supply Association and American Dairy Science Association, Monday morning, October 27. Awards for the winners of the Contest will be made at a dinner Tuesday evening, arranged by the International Association of Ice Cream Manufacturers.

For Tuesday and Friday morning, tours to nearby farms and plants are being arranged by Dairy Industries Supply Association in courtesy to DISI members. The tours will give dairy enterprisers from other countries an opportunity to inspect at close range modern North American milk production and dairy processing facilities, equipment and methods.

Motion pictures, further illustrating modern techniques in numerous countries and operations, will be shown on Monday and Friday afternoons.

Routine committee meetings will be held Tuesday afternoon and committee seminars open to all interested parties on Thursday morning and afternoon. Here the scope and substance of the forthcoming year's activities will be determined during round-table discussions. Activities of the committees concern include the development of techniques for stimulating dairy enterprise in less advanced areas; technical and practical counsel; preparation of multi-language handbooks for milk producers and dairy processors; research surveys of dairy enterprise conditions, etc.

DISI's business session is planned for Wednesday morning including the election of officers and directors. Following luncheon a world dairy outlook will be presented and dairy leaders from around the glode will be introduced.

A luncheon is also scheduled for Thursday, to be followed by a panel discussion led by various authorities on delivery prospects for dairy farm and dairy processing equipment and supplies.

On Thursday evening there will be a dinner followed by "summing-up" and "looking-ahead".

During the week photographic displays dealing with dairying and the dairy industries of many countries will be set

(Please turn to Page 52)

GIRTON STREAMLINE WASHERS

MODEL 474—Straightline washer with double jet plates. Will wash a case of bottles every 30 seconds. Steam or chlorine sterilization.

Here is the new line of Girton Pressure Washers . . . the established favorites. Fine engineering skill has streamlined the exterior for beauty and added many improvements to the interior for more efficient and economical operation. Investigate its possibilities for improving your dairy production. Write for bulletin.

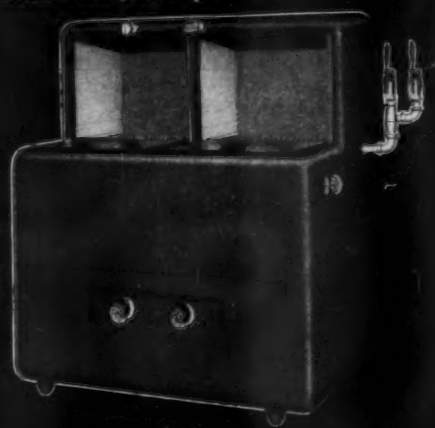
GIRTON MANUFACTURING CO.

MILLVILLE • PENNSYLVANIA

Plant-Tested Equipment for the Modern Dairy

MODEL 473—3 Compartment type—will wash a case of bottles every minute. Steam or chlorine sterilization.

MODEL 472S—Inexpensive 2 Compartment type. Steam sterilization only.



EDITORIALLY SPEAKING . .

Quality Defined

QUALITY IS an elusive thing. Try to arrive at a precise definition and you will find the words falling short of the mark. Quality is not only a physical state it is also a thing of the mind.

At a recent convention of Milk Inspectors and Sanitarians from Massachusetts and Connecticut gathered at the University of Massachusetts quality was defined as "something that makes people ask for a second helping". The definition smacks of Samuel Johnson and, like many of the lexicographer's famous definitions, it touches home.

The last competitor that a dealer has to fear is the cut-rate artist who distributes a low quality product. The "second helping" factor is an incentive to high quality. People will pay for a good quality product and come back for more. Poor quality items whether in milk or textiles, steel or manpower are weak competitors. The customer who really makes the till jingle is the fellow who comes back for a second helping.

●

"What Fools These Mortals Be"

THERE WERE two hurricanes in September. One compounded of wind and violent rain battered the Southeastern United States with a savage fury. The other, a man made thing, swirled with baffling power over the markets of the nation.

We do not propose to play the role of seer at this point. What strikes us as particularly remarkable about this price rise business is the public reaction. It is apparently a sort of social law that when the times are out of joint to a particular degree a demand for corrective action materializes. If prices are too low, as was the case during the depression, the public clamors for action. If prices are too high, as is the case today, the public clamors for action. Many times it does not matter much what the action is so long as there is action.

Such is the present case.

With eggs at 95 cents a dozen retail and butter close to a dollar a pound a galaxy of proposals, culminating in the grotesque plan for municipal price controls in New York City, have answered the call to action. Perhaps the outstanding characteristic of the schemes for salvation is loose thinking. It is customary to single out profiteering as the cause or possibly governmental ineptitude or even humanitarian activities. Of course the real underlying difficulty is the fact that the nation and the world is suffering from the devastation of two great wars.

Democracy thrives on information. Demagogues thrive on censorship and false stories. The *Review* has advocated many times before and we urge it upon the industry again to LET THE PUBLIC KNOW. Let the people know what it costs to produce a bottle of milk. Let the people know what it costs to distribute milk. Let the people know what they are getting for their money. The industry has done a great job selling the nutritional values of milk. Under the circumstances it is high time that an even better job was done in explaining why milk costs what it does. It won't hurt anybody, either, because, if we believe what the nutritionists tell us, the "most nearly perfect food" is still the best buy.

●

International

The current issue of the American Milk Review has devoted a large part of its space to the forthcoming convention week at Miami Beach. In so doing we excluded a dozen other articles that clamored for publication. Furthermore the space thus used represents an investment of no mean size. We knew all this, of course, and our action represents, for what it is worth, our endorsement of the October meetings.

We believe in dairy associations. We believe in men gathering for the exchange of ideas. We believe that progress is only possible where free exchange of information is possible. But above all we believe in the world wide viewpoint which these meetings symbolize. Dairy Industries Society *International, International* Association of Ice Cream Manufacturers are names adjusted to broad horizons.

The unification of Germany in 1871 was preceded by an economic union called the Zollverein. The great voyages of the Spanish Admiral were primarily economic ventures. The role played by the ancient Phoenicians, a trading people, in opening up the Mediterranean is a part of history. It is not necessary to subscribe to the Marxian doctrine of economics as the basis of history to realize the mighty power that is inherent in man's quest for a livelihood.

Educators Under the Skin

THE DAIRY industry woods are full of salesmen trying to sell. Some of these salesmen are good and contribute to the progress of the industry; some of these salesmen are not good and at best do not do a great deal of harm.

In this issue of the *Review* is an article by a representative of the manufacturer of a sanitizing compound. Trouble Shooting– Hot Water and the Better Milking Program by Herbert M. Ewell is a fine illustration of what a good salesman can do. In one sense a sales representative is an extension man. He has in his possession detailed knowledge of a particular phase of the industry. He carries the product of industrial research into the field and supervises its practical application. In his wake, if he is good, are a long string of better practices, more economical operations, and improved quality.

There is not a great deal of difference among the sanitizing compounds that are on the market. Impartial research by the dairy laboratories of land grant colleges have shown this to be true. Properly used a good job of cleaning can be done with any of the preparations. The premium, then, is on the salesman. The good salesman teaches as he sells. The poor salesman, the sharp, smooth talking lad who sells by high pressure propaganda, is a handicap to his employer as well as a detriment to the industry.

It is not merely on the chance that he will sell a few cases of cleaning compound, a new milking machine, or a few cases of bottles that bring salesmen to the dairy conferences. It is not simply to build up a better sales talk that manufacturers conduct schools for their representatives. It is a recognition of the important role that the salesman plays in disseminating new ideas, in building up correct practices, in serving as a "trouble shooter" that these activities have their genisis.

We like the salesmen who teaches rather than peddles, who counsels rather than drives. We like the kind of progressive dynamite characteristic of Mr. Ewell and other like him.

It is our guess, too, that they sell an uncommon amount for their company.

I WANT MORE CHOCOLATE MILK

YES, YOU CAN NOW HAVE ALL THE BRADWAY CHOCOLATE MILK YOU WANT

Once more you can satisfy the youngsters' yearning—adults, too—for delicious, nourishing chocolate milk. . . . because that rich, flavorful BRADWAY Chocolate Flavored Syrup is back in plentiful supply!

As always, you'll find in this fine syrup all of the superior features that have established BRADWAY as first choice among both dairymen and customers. It's non-settling and non-separating. The route man or clerk never needs to shake the bottle. Its color strength and color appeal are exceptionally strong and always the same . . . assuring appetizing, flavorful uniformity in every batch, with *less* syrup.

Use the coupon below to order your trial shipment of BRADWAY Chocolate Flavored Syrup. Have your route men and clerks pass the word to customers that your chocolate milk is made with finest quality BRADWAY. Do that and you'll sell more milk—more profitably.

BRADWAY *Chocolate Flavored* SYRUP

BRADWAY Chocolate Flavored Syrup is made from the very finest ingredients. It's rich and delicious . . . non-settling and non-separating . . . makes a truly superior chocolate milk.

FOR HOME USE

For your dairy and ice cream bars and other retail outlets, stock BRADWAY Chocolate Flavored Syrup in the handy 12-oz. jar, home size. Makes a delicious topping for ice cream and other desserts . . . makes money for you.

Ask Your Jobber

BRADWAY CHOCOLATE COMPANY
New Castle, Indiana

Please ship following order on money back guarantee:

_____gals. Bradway Non-Settling Chocolate Syrup @ $1.50 per gallon. (Packed 6 No. 10 tins to case or in 5 gallon pails.)

_____cases Bradway Chocolate Syrup @ $5.05 per case of 24—12 oz. jars.

SHIP EXPRESS FREIGHT

Name_____

Street_____ Zone_____

50 GALLON

100 GALLON
150 GALLON

300 GALLON

400 GALLON

STERILINE FOR 1948

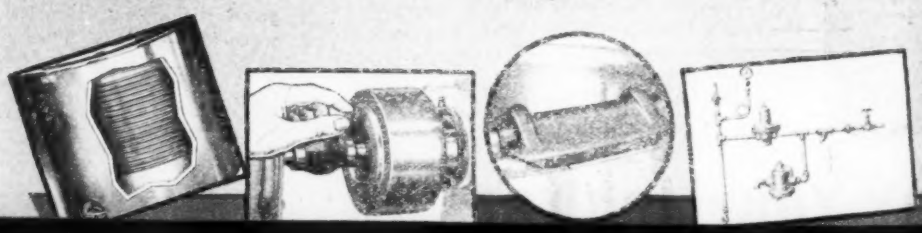
Steriline . . . America's largest producer of pasteurizers and storage tanks presents a full complement of new equipment to meet the ever-progressing needs of the nation-wide dairy industries. Here, in this broad array of lustrous stainless steel pasteurizers, the smallest to the largest plant may have unrestricted choice of capacities, accessories, and processing purposes. Such outstanding Steriline advances as the 2-speed motor coupling, refrigeration coils, air space heater steam conditioner, 14" oval observation hole, and many other features, are broadening the horizons of dairy products manufacturing without substantially increasing equipment invest-

Dairy Equipment Division **STEEL AND TUBE PRODUCTS CO.**

200 GALLON

STERILINE PASTEURIZERS

Extra Equipment



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"THE INDUSTRY'S FINEST"

ments. Steriline Stainless Steel Storage Tanks reflect similar engineering improvements. The "Add-A-Coil" feature which permits the simple installation of a Steriline Direct Expansion Ammonia Coil whenever the need arises; a sampling cock for inspection or testing; an automatic electric level stop . . . all are adding new conveniences and economy to milk storage. And newest in Steriline is the deluxe model with an all stainless steel outer jacket . . . a triumph in stainless steel fabrication. Ask your Steriline jobber; or write for literature on the equipment in which you are interested.

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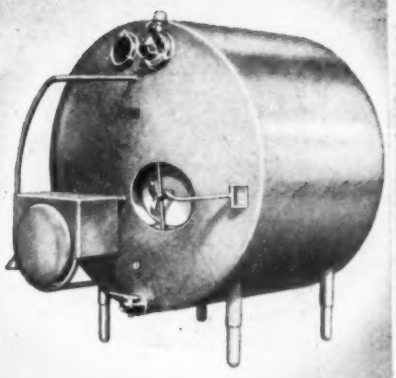

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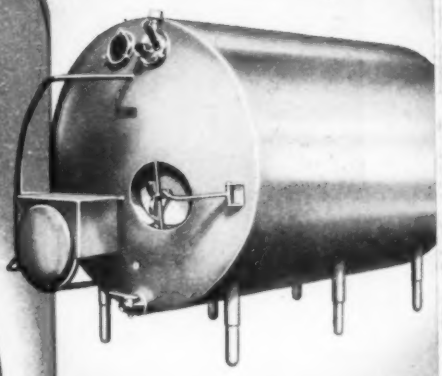
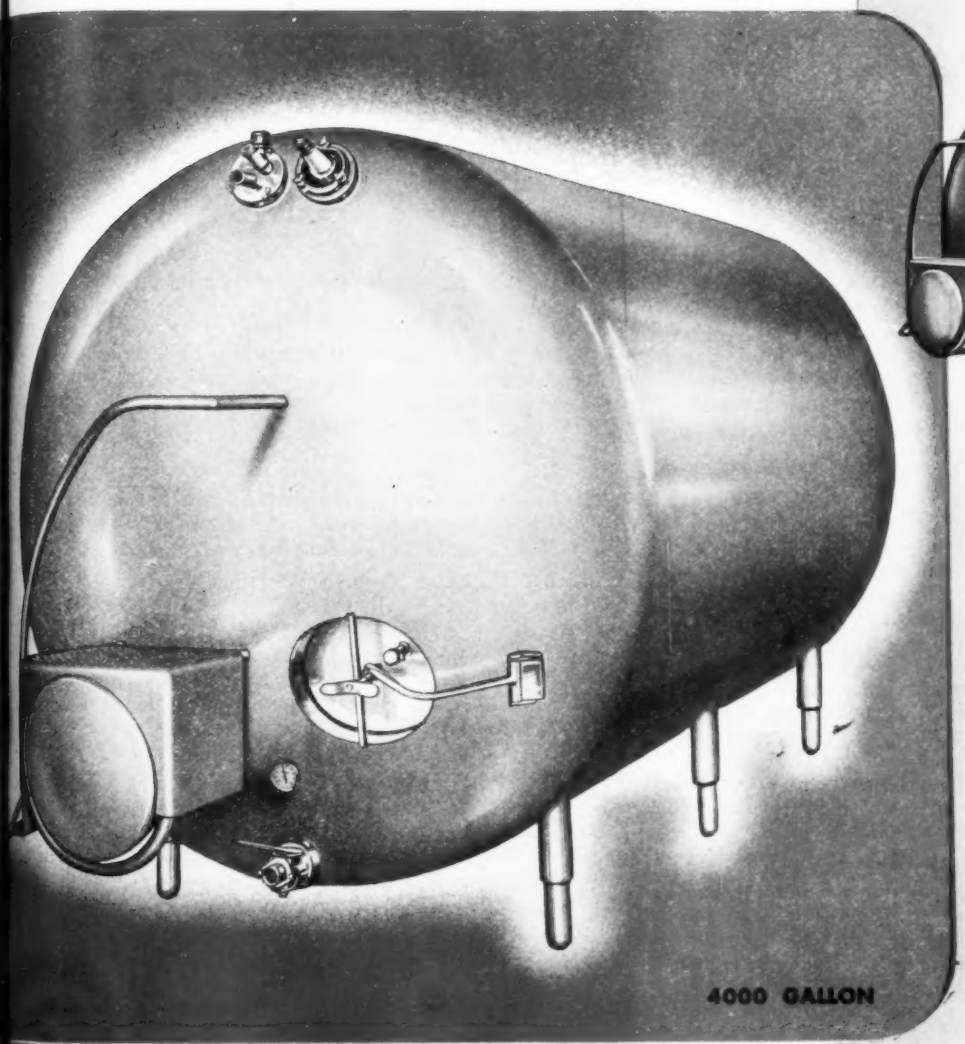


2000 GALLON

3000 GALLON



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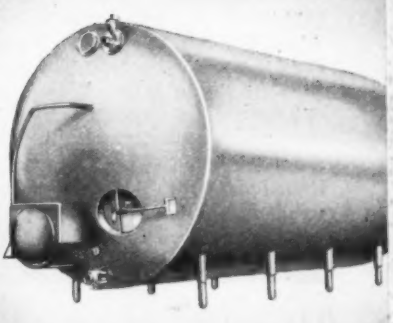
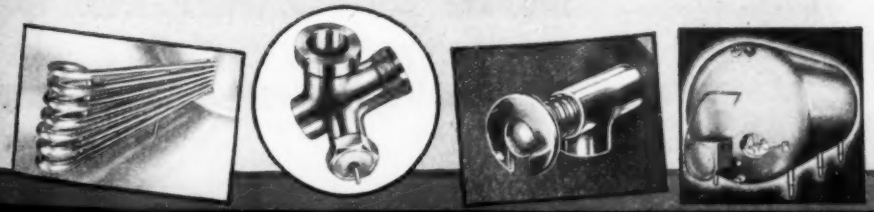


6000 GALLON

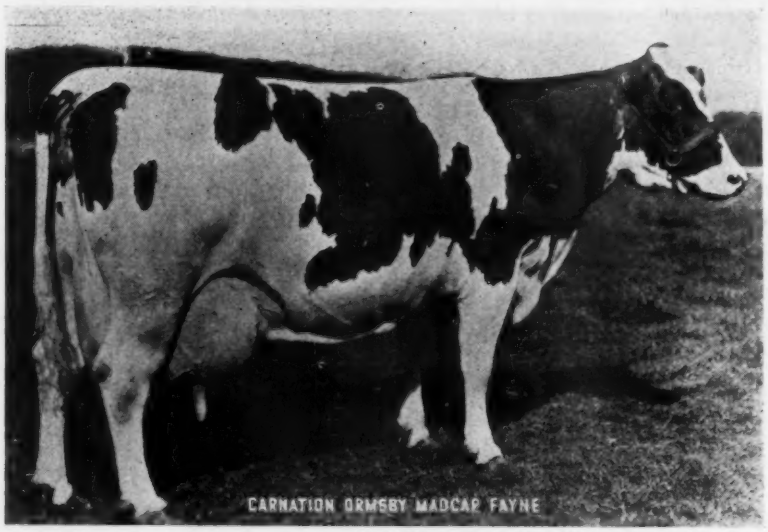
STERILINE STORAGE TANKS

Extra Equipment



XUM

Holstein-Friesians



A queen in her own right, Carnation Ormsby Madcap Fayne took the mantle of World's Champion from her sister, Carnation Ormsby Butter King, in May of 1942. In a 365 day test she established the magnificent record of 41,943.4 pounds of milk and 1,392.4 pounds of butter fat.

THERE ARE THOSE who refer to her as "the mortgage lifter". Others say she is "the farmers choice". Whatever the designation it would be hard to over-estimate the contribution that the big black and white cows of the Holstein-Friesian breed have made to the dairy industry in the United States and to the world. The most numerous of the five leading breeds of dairy cattle in the nation, holder of a large share of milk production records, Holsteins have a proud position in the food markets of the world.

Guardian of this great breed is the Holstein-Friesian Association of America located in Brattleboro, Vermont. Here the records of more than 140,000 pure bred animals are maintained with a stringent accuracy that would put an insurance office to shame. Brothers, sisters, fathers, mothers, grandfathers, grandmothers are classified, recorded and incorporated into the system maintained by the Association which describes itself as the "largest and strongest dairy cattle breed association in the world". Indeed, Sir David Porter, K.C.B., with his retinue of cousins and sisters and aunts would find himself in a sympathetic environment among the detailed files of the Holstein-Friesian Association.

Improvement of the Breed

Cattle breeding associations perform a variety of functions. Their most immediate purpose is to serve as a registry where the facts of lineage and records relating to purebred cattle are maintained but they have a second more intangible reason for existence which in the long run is their major contribution to the dairy industry. From the efforts of these associations come the most stimulating impulses for the improvement of dairy cattle. Through the exhaustive tests which the cattle breeding associations conduct from coast to coast come the records that stand as a challenge to cattle breeders everywhere. With a steady growth that at times approached the spectacular the cattle breeding associations are the backbone of increased productivity.

With breeders' associations scattered throughout the United States the Holstein-Friesian Association carries an active program of promotion, education, and record keeping. First job of the Association is to register purebred Holsteins and to keep track of the transfers in ownership. "The seller of a registered animal has an obligation to supply the registration papers properly transferred to the new owner, as part of the sale price," according to Association literature.

Testing programs include Herd Improvement Registry which might properly be called "Holstein Herd Test" since only registered Holsteins are eligible. Another test, more exacting than the first is the Advanced Registry. In this test every milking must be weighed and reported.

Came From Netherlands

The more than 3,400,000 purebred Holstein cattle that have been registered in the United States are descended, almost without exception, from less than 8,000 animals imported from Europe. As its name implies the breed comes from the Kingdom of the Netherlands. It is generally accepted that the Migrant Friesians and Batavians, part of the great movement of peoples across the face of Europe before the Christian era, brought their cattle with them when they settled in the fertile

(Please Turn to Page 58)

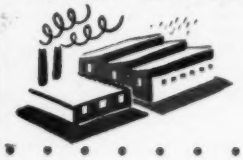
Cornell Ollie Catherine, Great Lady from Ithaca, New York, was Grand Champion at the National Dairy Show in 1938.

XUM

IT WILL PAY YOU TO USE HANDI-SQUARES!

You'll save space, time and money!

YOU EXPAND PRESENT PLANT-SPACE FACILITIES



3 cases of Duraglas Handi-Squares occupy the same area as 2 cases of standard round bottles!

YOUR TRUCKS CAN CARRY MORE MILK!

With Duraglas Handi-Squares, your trucks have up to 50% more working room—space for more milk; or butter, eggs and cheese, which add to your profits and your salesmen's earnings.

YOU PROFIT FROM LOW COST . . . LOW MAINTENANCE!

Changeover cost is very quickly absorbed by Handi-Squares' all-around economy. These savings, in your plant operation and in deliveries, will continue year after year. Small finishes assure lowest capping costs!

YOU CASH IN ON CONSUMER PREFERENCES!

Homemakers vote first of all for a *glass* container for milk. They trust its protection of milk's delicate flavor. So a better container had to be a better *glass* container. They're voting a 9-to-1 preference for square bottles in comparison with other glass bottles.

This space reserved for dairy's name, trade mark or sales message—Let us help you plan ACL for your bottles!

Duraglas TRADE MARK REG. U.S. PAT. OFF. **HANDI-SQUARE BOTTLES**

The trusted protection, unequaled economy of the returnable bottle *plus* new conveniences for the consumer and greater operating efficiency for you.

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

DRIVER TRAINING PAYS OFF

A Trained Driver Is a Safe Driver — Eight Years of Successful Training Has Made the Supplee-Wills-Jones Safety Program the Country's Finest

By ROBERT I. GAYLEY

Safety Director, Supplee-Wills-Jones Milk Company, Philadelphia, Pennsylvania

Most safe driving programs begin with a gory observation on the appalling number of traffic fatalities that occur in the United States during the course of a year and then enter a plea for better highways with elaborate traffic control. Not so at the Supplee-Wills-Jones Milk Company in Philadelphia. With this organization safe driving is reduced to men and equipment.

Acting on the assumption that the driver is the key in any approach to the safe driving problem the Supplee-Wills-Jones Company inaugurated an exhaustive training course for their drivers. This was in 1939. During the eight years that have elapsed since that first training course was undertaken the record has amply justified the effort.

For three years in a row the Supplee fleet has been awarded first prize in the American Trucking Association's National Truck Safety Contest. At the moment the concern is awaiting the results of the 1946-1947 contest which, they hope, will result in their fourth consecutive championship. Robert I. Gailey, Supplee Safety Director, has thrice been awarded the Auto-Lite Award by the American Auto-Lite Corporation for his contribution to fleet safety. The real reward, however, has been expressed in terms of reduced accidents and compensation claim lists. At the present time 155 of the firm's drivers have a record of from 10 to 16 years on the highway without an accident.

The success of the program has prompted other concerns, more than a hundred of them, from all over the world to study and use the Supplee-Wills-Jones safe driving plan in their organizations.

The American Milk Review counts itself fortunate to have the opportunity of presenting a detailed account of this remarkable system to the Dairy Industry of the United States.

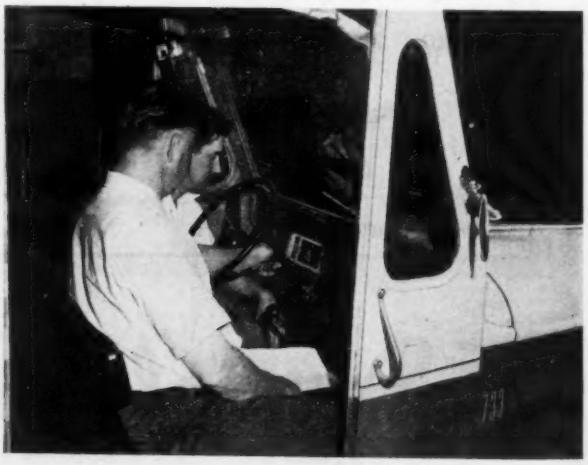
●

"DURING THE WAR A POPULAR summary of Selective Service requirements went something like: 'If you're old enough and still warm, they'll take you.' Unfortunately, the qualifications for securing a driver's license amount to just about that—if the applicant is old enough and not *visibly* infirm either physically or mentally, the driver's license is forthcoming.

"And just about everyone who can secure a license *can* drive a motor vehicle. But evidently only a small minority of them can drive safely if our steadily mounting nation-wide accident record is any criterion.

"We at Supplee believe, and our record indicates that we are correct in our belief, that the average driver can be

"You CAN teach an old dog new tricks" says Louis Norfolk, Driver Training instructor in the Supplee-Wills-Jones Safe Driving program. Here Norfolk greets a new group of potential truck drivers. From left to right they are Ray Aitkinson, John Eldridge, Joe Conrad, Louis Norfolk, James K. O'Hanlon, and Thomas McGuklan.



Learning the select secrets of the horseless carriage is Jim Hanlon under the tutelage of Ray Aitkinson. Gratifying results have come from the program including three national awards from the American Trucking Association and American Auto-Lite Corporation. Drivers with 10 to 16 years on the road without accident are numerous.

XUM

Smith-Lee "CELLOPHANE" HOODS

Help You Sell MORE MILK for GREATER PROFITS

"Cellophane" Hoods are tops for profits . . . tops for gaining customer enthusiasm, easy-to-open and tamper-proof. Preferred by housewives and nationally promoted, "Cellophane" packaging gives customers extra service and protection. Couple these modern hoods with safe, resealing Smith-Lee Pull Caps and every bottle becomes a volume-producing salesman.

TWICE CAPPED . . . TWICE PROTECTED FOR DOUBLE CUSTOMER SATISFACTION!

High-speed Smith-Lee Hooding Machines apply and tape "Cellophane" Hoods at the rate of 80 per minute . . . in one operation! Stored by the roll, "Cellophane" Hoods require less space than any other hooding material. *One roll seals 10,000 bottles.* Write today for full information.

CAP HEADQUARTERS
SMITH-LEE CO., Inc.
Oneida, N. Y. Piqua, Ohio

TWICE *Capped* TWICE *Protected* FOR DOUBLE *Customer Satisfaction*

Smith-Lee HOODS

PACKAGE YOUR MILK FOR PROFIT

Supplee Safety Director Robert I. Gayley (with glasses) beams as General Sales Manager John K. Bainbridge, Jr., right, rewards Supplee drivers for their long-time safety record. Charles Baxter, left received a pin for 10 year's safe driving; Joe Boyle, second from right received well earned recognition for 16 year's driving without an accident.

made a safe driver by proper training. In 1939, we laid out our driver training field, the first of its kind in the nation, and began the systematic training of all drivers, both for motor vehicle and for horse drawn wagons. To date we have trained over 3,000 drivers (including over 400 ambulance drivers for the Red Cross). A consistent yearly reduction in traffic accidents since 1939 has proved our theory that a trained driver is a safe driver.

"Every applicant for a position as a driver for our company must pass all three of the tests outlined below before being permitted to operate a company owned vehicle. Failure to meet our standards on any of these tests disqualifies the applicant.

"The three tests (physical, training field, and traffic) are taken after the applicant has already completed the mental and medical tests required for all job applicants.

Physical Test

(Minimum Requirements)

Visual acuity—20/30 in both eyes (with or without correction)
Color perception—normal
Depth perception—60 per cent
Peripheral vision—65 degrees
Glare recovery—six seconds
Complex vigilance (reflexes)—½ a second

"These tests of muscular coordination and vision are made in cooperation with the Pennsylvania Motor Police who maintain apparatus for conducting the tests.

Training Field

"After passing the physical test, an applicant goes to our training field where he is given 16 tests that we have found will indicate whether or not he will be able to operate the way we want him to. The 16 tests simulate actual driving problems, but are accentuated to make them more difficult than normal. Since no driver has ever completed the 16 tests the first time with a passing grade of 50, we then train him our way until he is thoroughly capable of handling the vehicle assigned him and realizes its possibilities and limitations. Our

(Please turn to Page 44)

ADVANCING WITH THE TIMES!

THIS IS OUR NEW HOME TO BETTER SERVE OUR CUSTOMERS—

Located on the corner of Hudson Street and North Moore Street, the building has six spacious and light floors, plus a large basement, to enable us to stock a full line of essential items to promptly serve you during this post war period and the many years to come.

Our inventory is rapidly being enlarged, so why not come in and see us; we will enjoy seeing you and assisting you to the best of our ability. If you cannot conveniently pay us a personal visit, drop us a line telling us what you need in a hurry. Then see what happens. You may be pleasantly surprised.

Also, we still have our experienced staff including engineers and service men to offer their services in laying out and equipping your contemplated new plant or changing your old one for better efficiency.

You may recall just twelve of our staff have a combined total of 271 years of experience in the Dairy Industry, the best insurance, we believe, of our ability to serve you well.

WISNER EQUIPMENT "At the Peak of Performance"

WISNER MANUFACTURING CORPORATION

DAIRY SUPPLIES AND EQUIPMENT

122 HUDSON STREET NEW YORK 13, N. Y.

Increase Your Fluid Milk Profits!

By Selling

Profitable Bottled

Non-Alcoholic Egg Nog

Made with

BLANKE-BAER'S

Tested Win-You

(brand)

EGG NOG MIXTURE

(*Non-Alcoholic*)

The Egg Nog Mixture with 10 years proven successful sales record of results.

Handled like Bottled Chocolate Drink and Bottled Orange Drinks. Goes over big during Fall and Winter months, especially the Christmas . . . New Year Period.

Not an extract, but a rich mixture of eggs, cream, sugar, spices, and flavorings.

COMPLETE EGG NOG MERCHANDISING PLAN—Decorated Milk Bottle Caps, Bottle Collars, Door Knob Hangers, Also Advertising Domination Signs.

Write for Full Details

"40 Years Experience Preparing Fruits & Flavors"

BLANKE-BAER EXTRACT AND PRESERVING CO.

3200 S. Kingshighway St. Louis 9, Mo.

Hydrogen Peroxide for Milk

Chemical Sterilization Replaces Pasteurization in Italy Army Quartermaster Report Says — New Process Has Three Day Effectiveness

ADDITIONAL DATA on the Italian use of hydrogen peroxide to sterilize milk is contained in a report now on sale by the office of Technical Services, Department of Commerce. Another report on the subject was released by OTS last year.

The report was prepared by U. S. Army Quartermaster investigator M. A. Dahlen.

In the Milan area in Italy all milk is sterilized with hydrogen peroxide rather than pasteurization according to the report. A plant for the electrolytic production of hydrogen peroxide of 39 percent strength and very high purity is operated by the firm Montecatini Societa Generale per L'Industria Minera e Chimica at Linate, near Milan. The practice will be extended greatly in Italy as soon as the production of hydrogen peroxide can be increased, the investigator believes. At present most of the hydrogen peroxide is used for textile processing. (Its use for milk sterilization was discovered accidentally by investigators who were studying dyestuffs developments during the war period.)

The Italians claim that the addition of 0.1 percent weight of 39 percent hydrogen peroxide to the milk results in sterilization in about eight hours and lasts for at least three days. Not only is the milk sterilized in this manner, but it is stabilized against souring since the bacilli responsible for souring are destroyed. The antiseptic effect of the hydrogen peroxide continues to some degree during long storage periods.

Stabilized Against Souring

The high purity hydrogen peroxide is manufactured by producing a very pure potassium persulfate electrolytically. This material is then decomposed to hydrogen peroxide which is purified by distillation under vacuum.

A recent development, not yet used commercially, is the production of a solid hydrogen peroxide-urea addition compound (35 percent hydrogen peroxide, 65 percent urea) to be used in tablet form, one tablet to sterilize 25 kilos of milk. Since urea likewise has antiseptic properties this material is expected to be even more suitable than the liquid hydrogen peroxide, the report states.

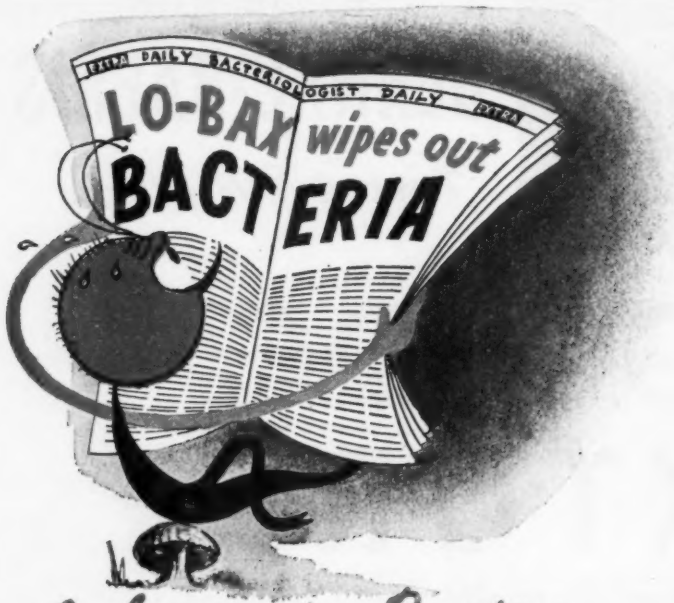
If the principle is found sound, the investigator believes, and if the practice is not contrary to American pure food laws, it would seem desirable to introduce this practice into the United States.

Information Available

Besides a general description of the process, the report (PB-31003; *Hydrogen peroxide and its use for sterilization of milk;* photostat, $5; microfilm, $2; 66 pages) contains technical appendices describing the treatment of milk with hydrogen peroxide, the evolution of the method, and the manufacture of liquid and solid hydrogen peroxide. Another appendix describes a new disinfectant called "Oortizon" developed by the S. A. Farmaceutici Italia, Milan.

A report previously released by OTS (PB-2461; *Die Zellwolle-Lehrspinnerei, G.m.B.H.;* photostat, $35; microfilm, $10.50; 520 pages; also describes the milk sterilization process, but is devoted primarily to the textile industry in Germany and Italy.

Orders for reports should be addressed to the Office of Technical Services, Department of Commerce, Washington.



bad news for Bacteria . . .

. . . but good news wherever milk is handled — wherever dangerous bacteria might attack product quality.

Lo-Bax, the concentrated, fast-killing chlorine bactericide, helps prevent milk spoilage and improves quality standards by rigidly controlling bacteria and sanitizing all surfaces with which milk or cream comes in contact.

Easy to handle—winter or summer—Lo-Bax kills bacteria almost instantly . . . at amazingly low cost. It contains 50% available chlorine, dissolves quickly in water — hot or cold, hard or soft — to make clear dairy rinse solutions. Learn how Lo-Bax can help you. Write us today.

THE MATHIESON ALKALI WORKS (INC.)
60 E. 42nd St., New York 17, N. Y.

LO-BAX
50% AVAILABLE CHLORINE

LO-BAX SPECIAL—a superior chlorine bactericide in granular form—packed in 2½-lb. bottles, ½ doz. to the case; and in 1 lb. bottles, 1 doz. to the case.

LO-BAX POWDER—a highly efficient chlorine bactericide packed in 1¾-lb. bottles, 1 doz. to the case.

Mathieson
LO-BAX
CHLORINE BACTERICIDE

Lo-Bax - Super-Nufos - HTH-15
Dry Ice - Carbonic Gas - Ammonia, Anhydrous & Aqua - Caustic Soda
Soda Ash - Bicarbonate of Soda
Liquid Chlorine - Chlorine Dioxide
PH-Plus - Sodium Chlorite Products
Sodium Methylate

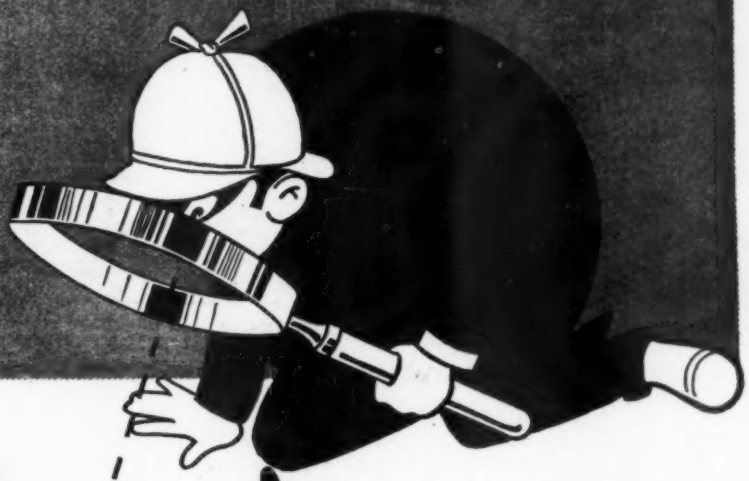
Looking For A "LOST" Market?

Find It

With

QUALITY

PRODUCTS



INSTALL A

Buflovak

Double Effect

EVAPORATOR

● Actually your market for concentrated milk products isn't "lost." It's just more demanding . . . demanding of QUALITY. And when you install a Buflovak Double Effect Evaporator you are assured of that quality in top-grade condensed and evaporated milks . . . products that enjoy a profitable market regardless of high or low trends. What's more, Buflovak Equipment will lower operating costs. Full solids recovery, 50% savings in steam and cooling water, and simplified operation and sanitation, help by adding to the profit.

THE *Buflovak* ROLLER DRYER

Quality conscious and profit minded creamery operators are lavish in their praise of the Buflovak Roller Dryer. An efficient, economical installation for drying whole milk, skimmilk or buttermilk.

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Miami's White Belt Dairy, Producing Certified Milk, Has Been an Instrument for Preventative Medicine in the Capable Hands of Dr. John G. DuPuis

ONE OF FLUID MILK'S greatest friends is Dr. John G. DuPuis, practicing physician of Miami, who also owns the White Belt Dairy there.

"After nearly 49 years of practicing medicine, I have not acquired any mysticism to build up health, strength and endurance in any patient who is not getting enough nourishment," Dr. DuPuis stated in an interview and added, "and the most important of all foods is clean milk."

Dr. DuPuis' White Belt Dairy and a laundry, also named White Belt, employs 220 people—more at the height of the Miami winter season—and the dairy handles Certified Milk, Grade A milk, Acidolphilus milk, pure cream, chocolate milk, cottage cheese, eggs, Old Plantation ice cream and ice cream novelties.

The ice cream plant was installed during the depth of the depression at a cost of $60,000. General Manager John G. DuPuis, Jr., takes particular pride in the fact that strawberries for ice cream of this flavor are grown on the White Belt's own farm.

How Dr. DuPuis happened to get into the laundry business is unique enough, but how he got started in dairying is believed to be without parallel in the long, honorable, romantic history of the medical profession.

Graduated from the University of Louisville Medical School in 1898, Dr. DuPuis started practicing at Lemon City (long since annexed by Greater Miami). He soon became concerned about the abnormal infant mortality rate.

"Many of the babies at the weaning age developed green stool diarrhea," Dr. DuPuis revealed. "The deaths were numerous. There was no general supply of fresh milk in the area. I had milk from my own cow and was not using all of it. So I told my patients that they could come to my house and get milk for their babies. Many did and on the proper nourishment the babies lived and grew. Some are leading citizens in Miami today."

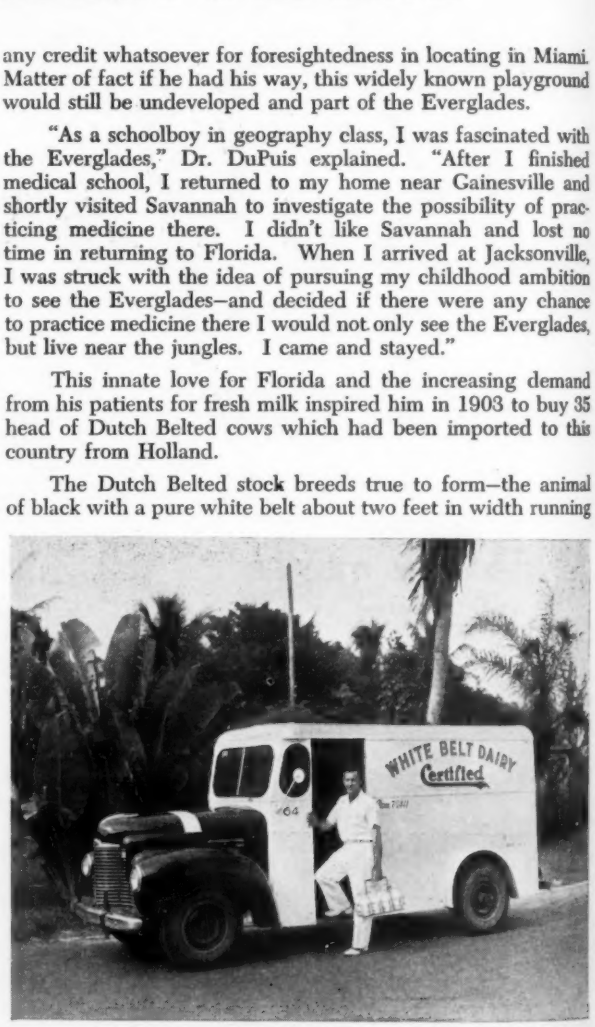
Dr. DuPuis never accepted any money for this milk. He said he never wanted to be in the dairy business and even today does not pretend to be a dairyman. His medical practice is his first interest.

Dr. DuPuis, unlike most Miamians, is a native of Florida. He was born and raised on a farm near Gainesville. He shuns any credit whatsoever for foresightedness in locating in Miami. Matter of fact if he had his way, this widely known playground would still be undeveloped and part of the Everglades.

"As a schoolboy in geography class, I was fascinated with the Everglades," Dr. DuPuis explained. "After I finished medical school, I returned to my home near Gainesville and shortly visited Savannah to investigate the possibility of practicing medicine there. I didn't like Savannah and lost no time in returning to Florida. When I arrived at Jacksonville, I was struck with the idea of pursuing my childhood ambition to see the Everglades—and decided if there were any chance to practice medicine there I would not only see the Everglades, but live near the jungles. I came and stayed."

This innate love for Florida and the increasing demand from his patients for fresh milk inspired him in 1903 to buy 35 head of Dutch Belted cows which had been imported to this country from Holland.

The Dutch Belted stock breeds true to form—the animal of black with a pure white belt about two feet in width running



THIS IS PART OF THE STORY—Earnest James, White Belt Route Salesman Has 23 Years of Service with White Belt Dairies to His Credit.

THIS IS ALSO A PART—the Main Plant of the White Belt Dairy at Miami Beach, Florida

around the body—generation after generation and thus the name White Belt Dairy. In those days little was known of advertising values, but Dr. DuPuis' choice of the Dutch Belted stock has proved a happy one, the picture of this cow being an effective part of White Belt advertising material. To help celebrate its 50th anniversary in 1948, the White Belt Dairy will distribute kiddie banks in the form of a Dutch Belted cow.

One of the factors that convinced Dr. DuPuis so early in his medical career that fresh milk was such an important factor in the diet of a healthy person was an impression formed as a public school teacher. In the five years he taught while earning money with which he could complete his medical education, Dr. DuPuis said that in his classrooms he found that sick and misbehaved children were often just hungry children.

Dr. DuPuis said that 30 years of service as a school director in Florida kept him in close touch with children and their parents and that after all those years of observation, he was just as firmly convinced that sick and misbehaved children are often just hungry children.

"And don't forget," he reiterated, "the most important of all foods is clean milk."

It was this emphasis on cleanliness that got him into the laundry business. Even before his herd was Certified by the American Association of Medical Combmissions, Inc., Dr. DuPuis took extreme care in the way his milk was produced. The white suits that he made his milkers wear and the individual white towels that he required for washing the udders of the cows were not coming back from the laundry fast enough and the laundry bills were enormous.

"Consequently I started a laundry in 1924 solely to facilitate maintenance of clean clothes for the dairy workers," Dr. DuPuis said. "But we have cottages for the families of 60 employees on our farm and soon the wives, who also were not getting good services from the laundries some distance away, were offering to pay us to do their laundry.

"It means much to keep up the morale of your help and their families, especially around a dairy plant where one is trying to produce clean milk," Dr. DuPuis said, "and I found myself in the laundry business."

Today the White Belt Laundry employs 60 people and has seven delivery trucks and enjoys a patronage throughout Greater Miami and Miami Beach.

The whole secret of the success, Dr. DuPuis feels, is that he has kept his business within bounds that it was always under his control. There are no officers nor stockholders. The White Belt Dairy and the Laundry are not incorporated.

Today Dr. DuPuis' son, John G., Jr., is General Manager of both the dairy and the laundry. Host of his efforts are on the dairy, and, like his father, he is a great believer in milk and can do a sales job on anyone at anytime. He is an expert trap and skeet shooter and has a private gun club on the White Belt farm and many wealthy Miamians and their wives gather there twice weekly and hold shoots and buffet suppers.

But it was Dr. DuPuis' wife who managed the dairy through the most troublesome times—at the start and through a tornado and hurricane.

Sunday, April 5, 1925, a tornado did severe damage to Miami. Some of White Belt's employees were among the 17 seriously injured. Milk trucks were demolished and cement walls caved in. Less than 18 months later a hurricane left even greater damage. Dr. DuPuis' losses from these two unkind visitors totalled nearly a quarter of a million dollars. But it was Mrs. DuPuis who guided the business from the start, who brought White Belt through these disasters.

"She had to," Dr. DuPuis said. "Often in the early days for weeks and months at a time she had no opportunity to consult at length with me. She was busy with the business and I was busy practicing medicine, because that is my first love, and many times we needed the income from my practice to help pay the bills at the dairy."

Dr. DuPuis recovered from these setbacks long since. Right now White Belt has just finished remodeling the processing rooms of the dairy plant. Much new equipment of latest

(Please Turn to Page 56)

BUT THIS IS WHAT MAKES THE WHEELS GO. Dr. DuPuis, Mrs. DuPuis and their son, John G. DuPuis, Jr. Built a Medical Practice, a Dairy Business and Laundry.

MASTITIS *and the* PLATE COUNT *of* MILK

BY DR. A. V. MOORE

Professor of Dairy Manufactures, A. & M. College of Texas, College Station, Texas

The high place that Mastitis occupies in current dairy thought is well illustrated by the consistency with which the subject makes its appearance on the agenda of the dairy conferences. In all parts of the nation, research and control programs relating to this scourge of the industry are attacking the problem. Professor Moore's artticle is a welcome addition to the growing body of literature on the subject.

●

WHEREVER fluid milk grading ordinances are in effect there is usually a regulation governing the sale of milk from cows affected with mastitis. In some instances the regulation will state specifically that the disease shall be checked by one or more diagnostic procedures; in other instances there is simply the statement, without clarification, that "milk from diseased cows shall be excluded". Regardless of the manner of stating the regulation or the efficiency with which it is enforced, its object is to protect public health.

The incidence of mastitis in dairy cows in the United States has been variously estimated as being from 50 per cent to 85 per cent. The variation in these estimates is not so important as the fact that the incidence is high. It is obvious that much mastitis milk is being consumed.

Too much emphasis is frequently placed upon the standard plate count of milk as an index to quality. This is true of raw as well as pasteurized milk supplies. A dairyman whose cleaning methods and cooling facilities are good, can easily produce milk with a composite count under 10,000 per ml. even though some of his cows individually are infected with mastitis and are shedding organsims in the millions per ml. Dilution is likely a factor here because this condition is often noticeable in large herds.

Another smaller dairyman with non-infected cows may produce milk with a composite count of 500,000 or more per ml. if he is not careful about general sanitation and cooling. On the surface his milk appears to be of lower quality than that described above. Excluding other factors such as the health of employees and the sanitary quality of the farm water supply the milk with the higher count is actually better in quality. Types of organisms, in other words, are far more important than numbers. The significance of standard plate counts on pasteurized milk is similarly misjudged. While proper pasteurization destroys pathogens and normally results in milk with a low count, it does not follow that one sample having a lower count than another is necessarily of better quality.

What is the effect on the standard plate count of including in the supply, milk from cows affected with infectious mastitis? Some figures to be shown herewith substantiate the confusion that exists on this question. If by regulation, no infected quarters of any cow may be included in a milk supply intended for human consumption, the first problem is to test each quarter separately for the presence of mastitis organisms. This is not always done. Instead, physical examinations are made for indurations, or indirect tests such as the bromthymol blue test, chloride content or leucocyte count are employed. The efficiency of any of these in detecting infectious mastitis is questionable and none of them throws any light on the total number of organisms present.

Testing Procedure

Standard plate counts were made on the aseptically drawn milk from a herd of 95 cows. About half this herd were known to be infected with Strep. Agalactiae in at least one quarter each. The infected and non-infected cows were milked, fed and managed in separate groups and were checked for infection weekly by the blood agar, direct microscopic and Hotis tests. Duplicate plates were prepared and one set incubated at 58 deg. C. for the detection of heat resistant organisms.

The data shown herewith are for 8 cows,—four in the infected and four in the non-infected group. These 8 were selected because they had all been fresh about three months and because the results on their milk typify those obtained for their groups. Samples were collected and plated on four consecutive days.

Data Observations

Infected cow No. 1 shows total counts as low practically, as any of the four non-infected cows and has no heat resistant organisms. Infected cow No. 2 shows an inconsistent total count, which though high, has no heat resistant organisms. Infected cows No. 3 and No. 4 are very high in total count and are inconsistent in heat resisting organisms.

The non-infected cows show total counts that might be normally expected. Heat resistant organisms in their udders are not related to total counts of any particular magnitude.

Conclusions

The presence of Strep. Agalactiae in milk does not permit predicting whether the standard plate count will be high or low.

There is no relation between heat resistant organisms found in the udder and the presence of Strep. Agalactiae or the total standard count.

Standard Plate Counts on Aseptically Drawn Milk From Mastitis-free and Mastitis-infected Cows—Four Consecutive Days

Cow number	Infected Incubated at 37°C.	Infected Incubated at 58°C.	Non-infected Incubated at 37°C.	Non-infected Incubated at 58°C.
1	4,900	0	1,200	0
	3,800	0	970	0
	40,000	0	1,600	40
	16,000	0	1,100	0
2	21,000	0	5,800	20
	*T.N.T.C.	0	7,700	0
	240,000	0	11,000	170
	340,000	0	7,400	4,300
3	T.N.T.C.	0	9,600	10
	T.N.T.C.	T.N.T.C.	1,100	10
	3,800,000	2,000	540	0
	4,100,000	7,000	11,000	0
4	T.N.T.C.	0	4,600	0
	T.N.T.C.	T.N.T.C.	970	0
	3,400,000	2,000	150	0
	460,000	30,000	3,200	0

*Too numerous to count.

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HELPS MILK PLANT

For the above reason, more and more milk plant managers are now urging haulers and field men to suggest *Rapid-Flo Check-Ups* to their patrons. Invariably, this leads to more high quality milk from the same producers—avoids possible losses—prevents misunderstandings all the way around.

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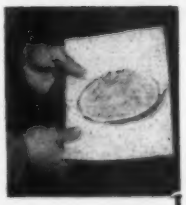
1. *Always use a Rapid-Flo Fibre-Bonded Filter Disk.* After filtering a can of milk—lift disk carefully from strainer and place on clean card or paper to dry.

2. Now, examine the dried disk carefully. Corrective measures are indicated if your *Rapid-Flo Check-Up* is not clean. Follow suggestions in the J & J MILK PRODUCERS' GUIDE*.



*Ask your hauler for the J & J MILK PRODUCERS' GUIDE if you don't already have a copy.

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Figure 1. Rodent hairs

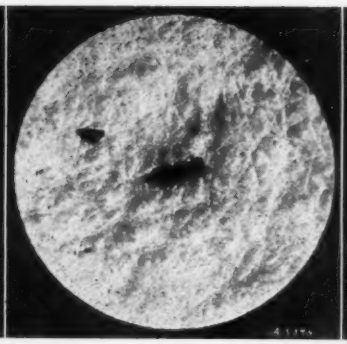

Figure 2. Small insect

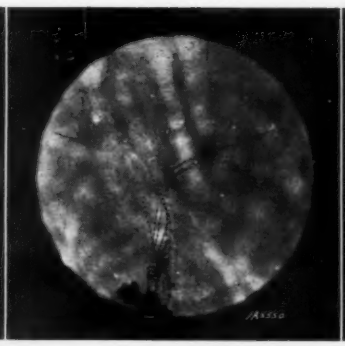

Figure 3. Feather barbs

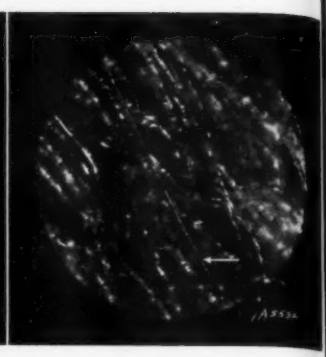

Figure 4. Rodent type hair from air

Air as a Source of EXTRANEOUS MATTER In Dairy Products

By T. J. CLAYDON

THE PROBLEM of sediment in dairy products has become of extreme importance during the past few years. Even after continued efforts, dairy plant operators have been only partially successful in controlling extraneous mater. With the present practice of examining sediment microsopically even small amounts have been found to be more significant than we had formerly appreciated. Often sediment pads of cream or other dairy products which appear quite good to the unaided eye are found to have undesirable material when examined under the microscope. The question is where did it come from, and how did it get into the cream? Since the frequency with which certain types of foreign material are reported in dairy products seems greater than can be accounted for by direct contamination, perhaps some yet unconsidered sources are involved. In attempting to solve some of these problems, an investigation was carried on at Kansas State College to study some possible sources of extraneous matter that had previously received little or no attention. Such information would be of assistance in adopting more effective control measures for avoiding contamination and might be of assistance in interpreting sediment test data. Although the investigation was primarily concerned with the situation relative to cream for butter making, many of the conditions would be applicable to dairy products generally.

It was considered that the air might be of more importance as a source of contaminating material, than had previously been appreciated. Accordingly procedures were developed to obtain and study air-borne particles around creameries, cream stations, and cream producing farms.

In the study, air was sampled by two general methods; filtration and sedimentation. The first method was used to show the type of material floating in the air and that might settle, and the second showed the material that did settle out in a certain period. Examinations were made inside and outside plants, in churn rooms, receiving and storage rooms, also inside and outside cream stations, and around barns on farms. The filter pads used to collect sediment were examined microscopically and the material was classified into different groups as follows; feather parts, rodent hairs, other hairs, insect parts, vegetable matter, cloth fibers, sand and clay, coal dust, and unrecognizable material that was not identified. In order to classify this material considerable micrscopic study was made of various known material, particularly rodent hairs, similar hairs, insect parts, feather parts, etc. Figures 1, 2 and 3 show what some of this known material looks like under the microscope.

Influence of Weather

Air examinations were made in approximately 150 different locations around creameries, cream stations and farms over a several months period, during late summer and fall, and under varying weather conditions.

One of the early observations was that the general amount of material in the air was influenced by weather, particularly damp weather. For several days following rain, relatively little material could be picked up by either method. This was more marked outside than inside. On the other hand, after several weeks of dry weather and with a slight breeze, much more material was in the air. This condition seems to bear a general relationship to the situation with sediment in cream.

The season of the year also influenced the amount and nature of material in the air. After the onset of cold weather there was a reduction in the frequency with which insect parts were encountered. Also, it would be expected there would be less tendency for animals to shed hairs.

The following table was prepared in order to show in a brief way the incidence with which the different types of extraneous matter were encountered in the air. The data gives the frequency with which samples from air containing each type of material were found.

Table 1.
Nature of some air-borne material around dairy establishments

Type of Material	Incidence of positive samples %
Feather parts	11.1
Rodent type hairs	15.2
Other hairs	26.3
Insect parts	35.3
Vegetable matter	58.2
Cloth fibers	63.8
Sand and clay	63.2
Coal dust	67.3
Unidentified	76.5

Much of the material found was not recognizable and was classified as unidentified. Of the material that could be recognized, sand and clay, coal dust, and cloth fibers were the most common, being found in over 60% of the examinations. Vegetable matter was found almost as often. Insect parts were found in 35% of the examinations. Rodent type hairs in 15%, other hairs in 26% and feather parts in 11% of the examinations. This material was found in the air around creameries, cream stations and farms. Much of the material

*Presented at the annual meeting of the Kansas Butter Institute, January, 1947, Wichita, Kansas.

could be identified only under the microscope. Figure 4 shows a rodent type hair from air from a creamery store room on one of the filter pads as it appeared under the microscope. It was not visible to the naked eye. Fifteen percent of the filter pads from creameries, cream stations and farms showed similar hairs. In other words rodent type hairs were definitely present in the air around these establishments. The same was true of insect parts and the other types of material shown in the table. Figure 5 shows the scale of a moth wing on an air filter pad as seen under the microscope. Except for feather parts the other types were found more frequently than rodent hairs.

Vermin Control Important

The most likely place to find rodent hairs in the air in plants is in the dry storage room. None were encountered in churn rooms or print rooms. There is evidence of a relationship between general sanitation practices, rodent and insect control, and the frequency with which rodent hairs and insect parts are encountered. For example, one plant checked was old and with an arrangement and type of construction that would suggest rodent and insect infestation. It was expected to get a considerable variety of extraneous matter in the air in spite of the fact that the odor of fly spray was present. Actually the microscopic examination of a number of sample pads revealed no rodent hairs and very few insect parts. It was then learned that an intensive rodent and insect control program had been carried on regularly for quite some time.

In cream stations there are possibilities of other problems. The places themselves are small and good housekeeping will not influence adjacent infestation. For example, one station—about as good as most and as well operated—consistently showed rodent hairs inside and out. It was also noticed that fine material identified as corn cob particles frequently settled out of the air. The source of these particles was learned to be a feed mill about 200 yards away. The situation naturally suggested an association between the corn cob particles, the feed mill and the rodent hairs. With the known rodent infestation of corn cribs on the farm and the drifting of particles from the mill it seemed logical that rodent hairs might be similarly dispersed. Samples taken from air in the general vicinity and also from soil showed fragments of rodent hairs. This is an instance of a source of rodent hairs beyond the control of the station operator.

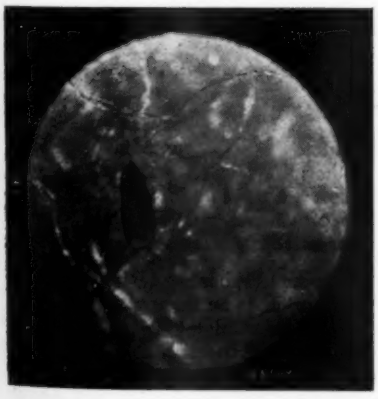

Figure 5. Moth wing scale from air

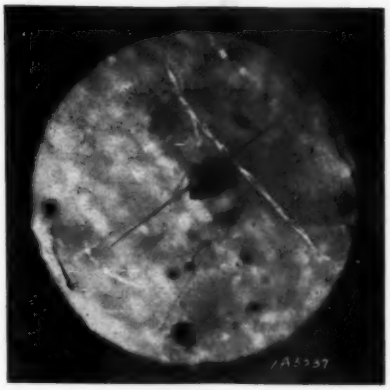

Figure 6. Rodent type hair in feed dust

Farms present rather a different situation. Rodents and rodent hairs are extremely common around corn cribs and feed storage. Their numbers around the barn are probably in inverse proportion to the number of cats, which runs about from 0 to 10. Accordingly, in barn samples rodent and cat hairs may be confused. They are somewhat similar and one must rely on general familiarity with the two types plus evidence of cats or rodents in the near vicinity in distinguishing them. It is not impossible that in barn samples the data may include some cat hairs.

In general, from the results of the investigation relative to the incidence of rodent hairs, insect parts, and other material carried in the air, it would seem that there is ample opportunity for their settling out into equipment or exposed milk or cream, either on farms in stations, or in plants.

Other Intermediate Sources

On windy days, dust, soil and other fine debris normally too heavy to be air-borne is picked up in varying quantities by gusts of wind and may be blown into cans, milk pails, etc. Dust on rafters, ledges, or window sills may be jarred or blown off into containers. This may happen on farms, in stations or around plants. What about this material as a source of rodent hairs or insect parts?

Out of 39 samples of such material from farms, stations, and in and around plants 64.1% had rodent hairs and 58.9% had insect parts. Figures 6 and 7 show a rodent hair and a tiny insect as they were found in this material and as they appeared under the microscope. They were not seen without the microscope. Feed dust and corn crib dust often contain a lot of rodent hairs and through handling, transporting to barns, feeding, etc. these hairs could be readily blown about.

Since rodent hairs and insect parts may be air-borne, and since so much of the soil, dust, etc. around dairy establishments contain them, what is the probability of finding them in equipment, pails, cream cans, etc.? We know that with cream cans there is a period of 1 or 2 days up to 5 or 6 days between washing at the plant and filling at the cream station. During this time they are stacked on docks, driven over dusty roads, set on dusty platforms and left open in cream stations, and rarely washed before filling. Might some of this dust and soil containing rodent hairs and insect parts be sifted in? A study on this has only been started, but examination of a number of cans at four stations and one plant showed that 40% contained rodent hairs and 40% contained insect parts. The information is significant enough that more examinations of this type will be made. Definitely this is an indirect source of rodent hair and insect contaminaton.

Control Measures

So far as suggested control measures are concerned, the information indicates the need for much greater protection of cans, equipment, and milk and cream from material carried in the air. It shows the absolute necessity of tight

(Please turn to page 52)

Figure 7. Minute insect in ledge dust

QUATERNARY AMMONIUM COMPOUNDS

A Study of Their Effectiveness as Sanitizing Agents for the Dairy Industry

By W. S. MUELLER, D. B. SEELY and E. P. LARKIN

Department of Dairy Industry, University of Massachusetts

THE limitations of the Food and Drug Administration method as a means for measuring the germicidal potency of quaternary ammonium compounds have been cited so often in the literature that it seems unnecessary to repeat them here. The grmicidal potency of quaternaries is evaluated in the dairy research laboratory at the University of Massachusetts by a method which is not new, yet it involves the use of some new procedures and some refinements of older techniques. In brief, the method consists of the addition of a standardized inoculum to a germicide, and the results are simply reported as percentage survival or kill for definite periods of contact time. The usefulness of this method depends largely upon the degree of accuracy to which the inoculum can be standardized, as to both number and vitality of organisms present, and also upon the efficiency of the inactivator.

Mainly, two quaternary ammonium compounds were used for this study, one an alkyl dimethyl benzyl ammonium chloride and the other a diakyl diaralkyl ammonium chloride. Obviously, not all of the applications of a quaternary for dairy use can be covered in the space allotted to this paper; therefore only the highlights of our findings are given.

Description of Test Method

List of the various steps in procedure:

1. Wash vegetative cells or sports from agar slants into phosphate buffer solution. If spores are desired, heat to destroy vegetative cells.

2. Homogenize suspension.

3. Determine turbidity of suspension with spectrophotometer.

4. Standardize suspension to an established number of organisms per ml.

5. Place 99 ml. of the desired strength of the germicide in a two- or three-hole flask and place in constant temperature bath. Add organic material or other substances if desired.

6. Start motor-driven agitator.

7. Add one ml. of inoculum to germicidal solution.

8. Withdraw one ml. of solution after definite contact time and transfer to a solution containing the inactivator.

9. Make necessary dilutions, plate, incubate, and count according to Standard Methods (5).

10. Report results as percentage kill or percentage survival.

Homogenization of bacterial suspension: The usual procedure for breaking up the inoculum is by shaking. For this study, in order to secure a more homogeneous or uniform suspension, all inoculi were homogenized or emulsified with a small hand homogenizer manufactured by the Club Aluminum Products Co., Chicago, Ill. The hand homogenizer can be easily sterilized by heat, and according to the manufacturer its working pressure is approximately 600 lbs. per sq. in. Repeated trials with *E. coli,* and *B. cereus* showed no further breaking up of the inoculum after the fourth homogenization, but there was some indication that the *S. aureus* suspension was further disintegrated by additional homogenization. Microscopical examination also revealed that homogenization was more effective on suspensions of *E. coli* and *S. aureus* than on the sticky, long chain, spore-former *B. cereus.*

Standardization of number of organisms in the suspension: After homogenization, the number of organisms in the inoculum was determined with a model 11 Coleman spectrophotometer. Suspensions of *E. coli, S. aureus* and *B. cereus* showed the highest transmission at a wavelength of approximately 610 *mp.* At the outset of this study, the inoculum consisted of a mixture of *E. coli, S. aureus* and *B. cereus.* Later it was found best to test each organism separately against the germicide. Transmission measurements and bacterial counts were made on various dilutions of the mixture of the three organisms and also of each one alone. From these studies standard concentration-transmission reference curves were plotted. Thereafter when an inoculum was prepared, only a transmission measurement was needed and the number of organisms present could be determined from the curve and the suspension standardized to a predetermined number by diluting. While the spectrophotometric method for standardizing the inoculum is not perfect, the results obtained are fairly accurate and may be made more so by further refinements in technique.

Stopping germicidal action by the use of an inactivator: The usefulness of the described method for determining germicidal potency depends largely on whether or not the killing power can be stopped at once at the end of each contact period and not allowed to continue throughout the incubation period. While germicidal action can be checked by dilution, this means is impractical because it is often necessary to plate only slightly diluted samples. Therefore the use of an inactivator is imperative.

For some time, sodium thiosulfate has been used extensively as an inactivator for chlorine. At the time this study was started, to the author's knowledge no inactivator for quaternaries which was entirely satisfactory had been recommended. Valko and DuBois (6) had shown that "Duponol PC" interfered strongly with the action of the quaternary. Baker et al (1) considered the antagonistic action of lecithin and phospholipids. The interfering action of soap has also been discussed (2).

Characteristics of a good inactivator are that in small amounts it must be positive and fast in action and not be germicidal itself. It must be effective for the entire time the plates are incubated (48 hours). It should be water soluble, stable to sterilization temperatures, and should not deteriorate upon standing for reasonable lengths of time.

In connection with this study, the following materials were investigated as inactivators for quaternaries and were all found to be inadequate in one way or another: bentonite, activated charcoal, turkey red oil, U.S.P. castile soap, tincture of green soap, "Duponol PC" and other anionic surface-active agents.

Lawrence (3) has recommended sodium naphthuride as an inactivator for quaternaries after studying the effect of this material in connection with the F.D.A. method of evaluating germicides. In our studies sodium naphthuride was evaluated as an inactivator to be used in the

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*Contribution No. 622 of the Massachusetts Agricultural Experiment Station. Presented at the Disinfectant Symposium, mid-year meeting of National Association Insecticide & Disinfectant Manufacturers, Chicago, June 9, 1947.

Reprinted from the September 1947 issue of Soap and Sanitary Chemicals.

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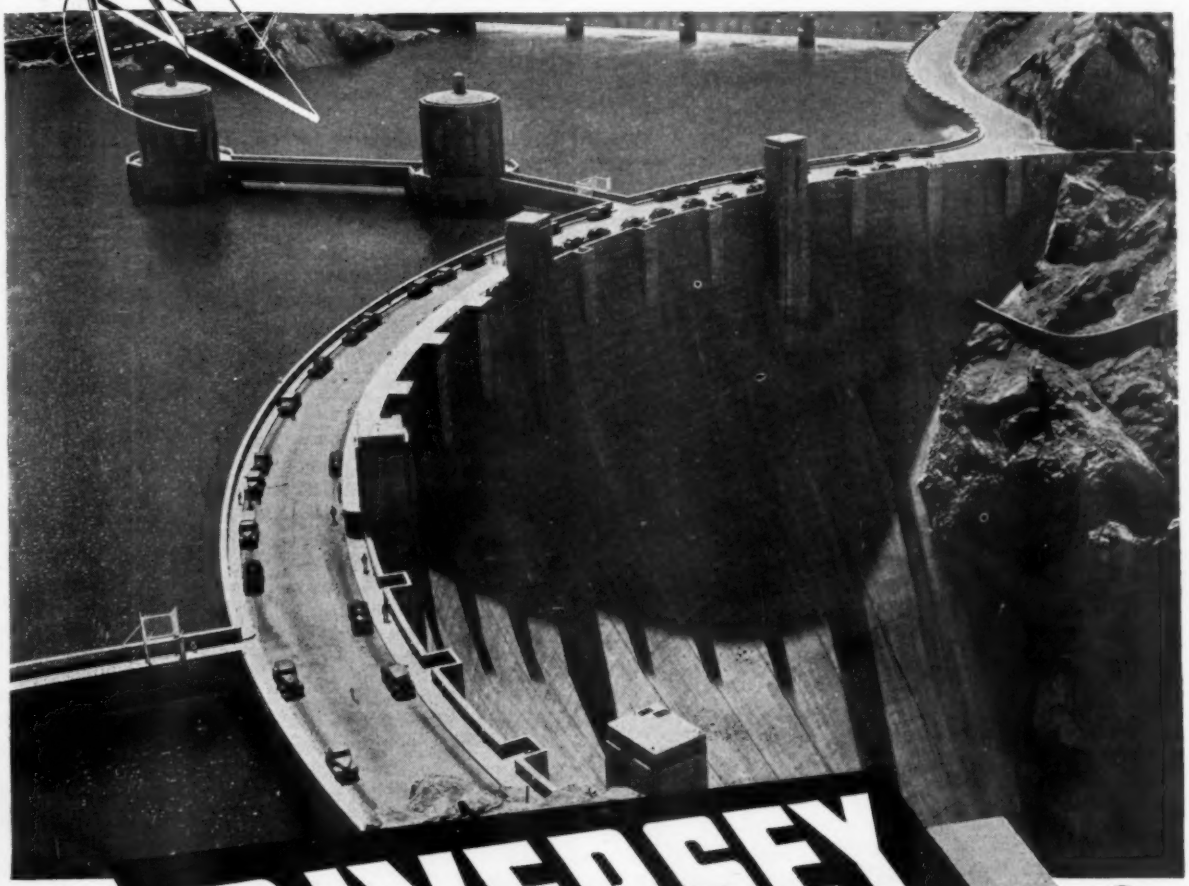

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germicidal test which has been described, keeping in mind all of the characteristics which make a good inactivator. The test organisms used mostly were *E. coli*, *S. aureus* and *B. cereus* (24-hour culture). It was found that 400 p.p.m. of sodium naphthuride was needed to inactivate 200 p.p.m. of the quaternary for a period of 48 hours. The percentage of inactivation was noted to decrease for increasing periods of time. Sodium naphthuride (400 p.p.m.) showed no germicidal action by itself. It was also found that the maximum and minimum quantities of the inactivator that ordinarily would be carried over into the Petri dishes had no effect on the plate counts. The inactivator was found to be readily soluble in water, not affected by ordinary autoclaving, and in solution it remained effective when stored at approximately 40 deg. F. for at least three weeks.

Indications are that sodium naphthuride is not effective for all organisms. While this inactivator is not perfect, to our knowledge it is the most satisfactory one which has been recommended.

Effect on Dairy Bacteria

E. coli, S. aureus and *B. cereus:* These organisms, representative of a Gram negative, a Gram positice and a spore-forming organism, were selected as the standard test organisms for many of the tests made in this study. All three organisms when obtained from 24-hour cultures were completely killed after a 5-minute contact with a 200 p.p.m. quaternary solution.

Thermoduric type bacteria: Three cultures were used for this experiment and they were isolated from milk cans which had been given ordinary can washing treatment. All three were Gram positive rods showing rapid spore formation. Two cultures survived a temperature of 208 deg. F. (97.8 deg. C.) for 30 minutes and the other one a temperature of 185 deg. F. (85 deg. C.) for 30 minutes. These organisms could easily survive pasteurization. The effect of varying times on 24-hour cultures of a mixture of the three sporeformers when in contact with 1000 p.p.m. of a quaternary is shown in Table 1.

TABLE 1

Effect of varying times on thermoduric sporeformers* in contact with 1000 p.p.m. of quaternary

Time of contact	Average percentage survival of three cultures
10 min.	64.5
15 min.	54.9
20 min.	55.6
25 min.	52.3
30 min.	49.2

* Inoculum—24-hour cultures, 33,000,000 organisms per ml.

It is evident that a 30-minute contact time with as much as 1000 p.p.m. of the quaternary will not satisfactorily reduce the percentage survival of these thermoduric sporeformers. Microscopical examination of 24-hour cultures of the three sporeformers revealed that approximately 48 per cent were spores, which is a close correlation with the percentage survival after 30-minute contact.

The effect of the quaternary on spores was also determined. The three thermoduric sporeformers were grown on standard agar for 15 days, cultures suspended in buffer solution and heated to kill any remaining vegetative cells. The inoculum used contained 5,267,000 spores per ml. After 30 minutes contact the percentage survival for the 1000 p.p.m. and 2000 p.p.m. was 82.0 and 72.3 per cent, respectively. The exposure of these spores to 2000 p.p.m. or 1:500 dilution for 30 minutes covers the most practical concentration and time that may be used for ordinary sanitizing procedures.

While the spore count was not reduced effectively by the quaternary, it is well to remember the bacteriostatic effect. In experiments where 200 p.p.m. of the quaternary was tested against the three thermoduric sporeformers (24-hour cultures) without an inactivator, the 1:100 dilution plate, containing a 1:50,000 dilution of quaternary was usually sterile. This observation implies good bacteriostatic for the quaternary against sporeformers.

Thermophilic type bacteria: Four cultures were used for this experiment and they were isolated from milk cans which were given ordinary can washing treatment. These organisms were Gram positive, non-sporing rods that grow well at 131°F. (55°C.) on standard agar. Germicidal tests on these organisms with 100 p.p.m. and 200 p.p.m. of a quaternary were made before a good inactivator was available. When depending upon high dilutions of 1:10,000,000 or higher for inactivation, the thermophiles showed no growth after 5 minutes contact time. In all probability they were killed because it does not appear that a quaternary could be bacteriostatic in the high dilutions employed.

Effect of Dairy Contaminants

Effect of cow manure and non-fat milk solids: For obvious reasons the germicidal properties of a quaternary should be evaluated in the presence of contaminants ordinarily encountered in actual use. A dairy sanitizing agent if used as an udder wash must often function in the presence of cow manure and other forms of soil. Also, if dairy equipment is not thoroughly cleaned, the sanitizing agent must function in the presence of milk solids. With these facts in mind the effect of varying concentrations of dry cow manure and dry non-fat milk solids on the germicidal properties of quaternaries were studied.

Varying amounts of dry cow manure were added to a quaternary solution so that the final solution contained 200 p.p.m. of active ingredient. One ml. of inoculum, containing 36,000,000 organisms (24-hr. cultures of *E. coli, S. aureus and B. cereus)* was added to the germicidal solution. After a 5-minute contact with the quaternary at room temperature, the percentage survival was determined and the results are given in Table 2. In the same manner the effect of varying concentrations of dry non-fat milk solids on the germicidal properties of a quaternary was determined and the results are also given in Table 2.

It appears that cow manure was wore detrimental to the quaternary than non-fat milk solids. Approximately 0.3 percent of either material produced the first significant decrease in germicidal potency. The fact that a relatively small amount of non-fat milk solids partly inactivated the quaternary indicates that it would not be practical to sterilize milk by adding a quaternary to the milk.

Use as an Udder Wash

Two quaternaries (200 p.p.m.) were used as udder washes on the college herd during the winter, each for a period of 4 weeks. No chapping or cracking of udders, teats, and milkers' hands were observed at any time for the duration of their use. In order to obtain information on the approximate length of time a quaternary solution will remain effective as an udder wash, tests were conducted on the college herd. A two-gallon portion of 200 p.p.m. quaternary was used for each test. After a varying number of cows was washed, a sample of the sanitizing solution was taken and the number of live organisms per ml. determined. Also, the germicidal potency of the

TABLE 2

Effect of cow manure and non-fat milk solids on the germicidal properties of a quaternary (200 p.p.m.)

Amount of dry cow manure and dry non-fat milk solids added Per cent	Percentage survival after 5-minnute contact time at room temperature Manure*	Non-fat milk solids**
0.000	0.0	0.0
0.045	0.0	0.0
0.090	0.0	0.0
0.180	0.2	0.0
0.270	0.3	1.2
0.360	18.3	3.3
0.540	90.0	35.8
0.720	100.0	45.8
0.900	100.0	63.9

* Inoculum—Mixture of **E. coli, S. aureus and B. cereus.** 1 ml. contained 36,000,000 organisms.
** Inoculum—Mixture of **E. coli, S. aureus and B. cereus.** 1 ml. contained 72,000,000 organisms.

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solution was tested against a mixture of *E. coli, S. aureus and B. cereus* (24-hour cultures. The results obtained are given in Table 3.

TABLE 3
Germicidal potency of a quaternary udder wash

Number of cows washed	Number of organisms per ml. of wash solution	Percentage survival of added organism*
10	7	0.0
20	16	0.0
30	45	—
40	2600	3.4
53	—	53.8

* Inoculum—1 ml. contained 391,000,000 organisms of E. coli, S. aureus and B. cereus.

Under the conditions of this test, approximately 30 to 40 cows could be washed before the germicidal potency was decreased to a point where a fresh solution was needed.

In order to obtain information on the amount of dirt to expect in udder washes, some of the solutions used for the test were analyzed for total solids, total organic material and total inorganic material. After washing the udders of 40 cows, in no instance did the wash water contain more than 0.30 percent total solids, 0.17 percent organic material and 0.13 percent inorganic material. This concentration of dirt in the udder wash solution corresponds closely to the amount of manure and non-fat milk solids which gave the first significant inactivation of the quaternary.

Cleaner-Sanitizer Combination

Recently a great deal of interest has been shown in dual purpose powders, designed to clean and sanitize in one operation. The limit to the length of this paper does not permit a discussion of the merits and limitations of such a procedure. However, attention is called to such products here because it is an excellent example of a situation where a quaternary is expected to function in the presence of a great amount of organic material.

Because of the possible application of its use to the dairy industry, tests have been conducted in the dairy research laboratory with a dual purpose powder, composed of alkaline cleaners, a sudsing agent and a quaternary ammonium chloride compound. This product was designed chiefly to be used for restaurant dishwishing operations. Its germicidal efficiency was tested against *E. coli* in the presence of a slightly modified standard dishwash soil (4) which contained the following ingredients: peanut butter, butter, lard, flour, dried egg yolk, and evaporated milk. Results obtained are given in Table 4.

The low percentage of survival is impressive in the light of the fact that the concentration of quaternary was only 100 p.p.m. and the amount of organic material was large. The amount of dishwash soil added to the germicide, no doubt, was more than is normally encountered in general practice. The analysis of a limited number of samples of dishwash water, obtained from various eating places, revealed none to exceed 0.7 percent of total solid material. The relatively high germicidal potency of the quaternary in the presence of so much organic material is probably due in part to the pH of the product which is 10.5. It is well established that increasing the pH of the solution increases the killing power of a quaternary.

TABLE 4
Germicidal potency of cleaner-sanitizer in the presence of organic material

Product	Amount used	Concentration of quaternary	Amount dish wash soil added	Percentage survival* after 5 min. at room temperature
A	2 oz. or 4 gal.	100 p.p.m.	none	0.00
Same	2 oz. or 4 gal.	100 p.p.m.	4 per cent	0.36
B	2 oz. or 4 gal.	100 p.p.m.	none	0.00
Same	2 oz. or 4 gal.	100 p.p.m.	4 per cent	0.15

* Inoculum consisted of 1 ml. of **E. coli** suspensionn containing 150,000,000 organisms.

Sanitizing Milk Cans

Present day can washers involve the use of detergents, hot water, hot air and steam. With all these tools in use, many plants are still unable to comply with the standard of 40,000 colonies per 40-qt. can as set down by Standard Methods (5). In cooperation with the Chemical Corporation, Springfield, Mass.; Winthrop Chemical Company, New York, and two large pasteurizing plants in Springfield, Mass., a study was made on sanitizing milk cans by additional treatment with a quaternary spray. In one plant the quaternary was injected under pressure with steam and in the other under pressure with air, both treatments following immediately after the regular cleaning and sanitizing treatments. The experiment was made during the summer months when the counts on the cans were probably at their highest. An average of twenty cans was examined daily during the test. As the cans went through the washer they were sprayed with a quaternary and an equal number of unsprayed cans served as the control. In some instances bacterial examination of the cans was made immediately after the can had left the washer and in other instances the examination was delayed for 24 hours, in order to note the bacterial condition at the normal time for the next filling. The procedure used for determining the sanitary condition of the cans was essentially that given in Standard Methods (5). Approximately 400 cans were investigated, and 200, 400 and 800 p.p.m. of quaternary were used. Since practically the same results were obtained with the three concentrations of the quaternary, the results are presented as averages in Table 5.

The marked increase in bacterial counts obtained for untreated cans after 24 hours was expected. The predominant types of organisms found on the plates were aerobis sporeformers, chromogeni cocci, and some thermophilic organisms. While the reduction in count is appreciable where the quaternary was used, the average count was not brought down to 40,000 per 40-qt. can as set forth by Standard Methods. The increased reduction as a result of the quaternary spray treatment for the 24-hour samples can probably be explained by the inhibiting action of small amounts of the quaternary.

In evaluating the results of this particular phase of the study, it should be kept in mind that they are of a preliminary nature only. Further tests are planned in which improved nozzles and other refinements in special apparatus for spraying the quaternary will be used. The use of better methods of applying the quaternary no doubt will increase the efficiency of the spray method of sanitizing milk cans.

Sanitizing Milking Machines & Pails

Tests showed that properly washed milk pails and the metal parts of milking machines can be effectively sanitized by immersing for three minutes in a solution of 200 p.p.m. of quaternary.

Proper sanitization of teat cups between each cow milked is a difficult problem. Tests were made at a dairy barn where it is the practice to scrub each teat cup after the herd has been milked and then soak the rubber inflation tubes in a lye solution between milkinng periods. During milking the teat cups are dipped in and out of a sanitizing solution immediately after each cow is milked. By use of a stopwatch it was found that the average time the teat cups remained in the solution was about one second. Two quaternaries were tested at this dairy barn using them in a concentration of

TABLE 5
Effect of spraying cans with a quaternary

	Samples taken immediately	Samples taken after 24 hours
Ave. number of colonies per untreated can....	206,000	4,699,000
Ave. number of colonies per treated can.....	119,000	336,000
Percentage reduction as result of spray treatment	42.3	92.9

(Please Turn to Page 57)

LET'S LOOK AGAIN AT THE ECONOMY of SHARPLES Presur-Seald SEPARATORS and CLARIFIERS

Most separator and clarifier users will agree that major operating economies are effected by use of non-corrosive metals . . . employment of a positive, non-clutch drive with completely enclosed motor . . . elimination of product-wasting relief valves, etc.

But let's see what Sharples has done with some "minor" parts; say, the seals which maintain pressure at inlet and outlet points.

And for this purpose let's consider the toughest job to which a Presur-Seald Separator has yet been assigned . . . one in which milk is separated at about 160°F. and seals must withstand three or more idling periods during an average day.

Purchase records show that for more than a year this Sharples separator has required less than one set of new seals per week . . . which performance really pleases us more than that of a Presur-Seald Clarifier in another very large plant which has required only three sets of seals in four months.

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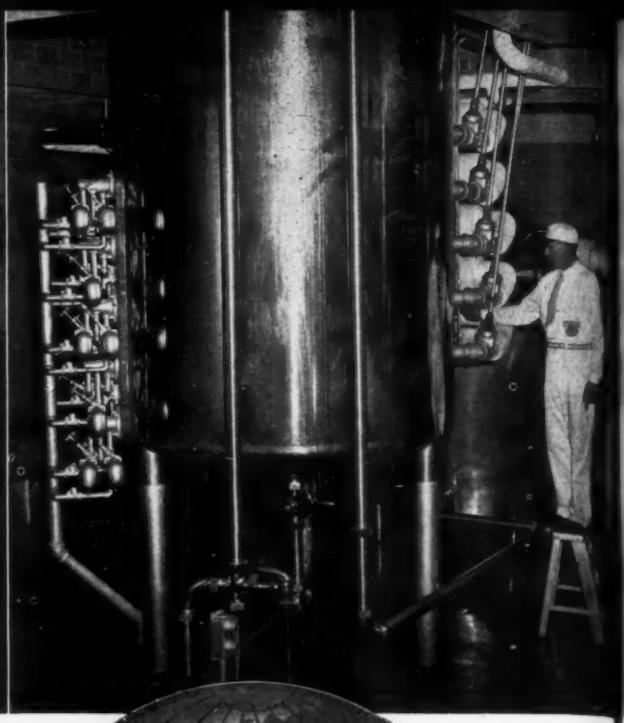

NEW ZEALAND

UNITED

Dairy Industry

That Many Men from Many Lands Have Built the Modern Dairy Business is Well Exemplified by the October Meeting of the Dairy Industry Society International

THE FRENCH CALL IT "LAIT". The Italians say it is "latte". In the lands across the Skagerrak they use the word "mejlk". But regardless of local linguistic variations the thing itself is so truly international that there are few places on earth where the pantomine of milking a cow does not meet with immediate recognition. The diplomats and the students of international relations might do well to use the dairy industry as a case history in international cooperation. Its origin long since lost in the shrouded era of pehistoric man, milk alon gwith the cattle and equipment that produce it has come into our modern hands as the evolutionary product of many men and many lands.

In our 20th century streamlined civilization, where the horses live under the hood of a brand new second hand car and the milk is conveniently delivered on our doorsteps every other day, we are inclined to confuse the fundamentals of society. Most of urban America is more concerned with new design in automobiles or the length of milady's skirt than with the state of the nation's bovine population. Not so with our forebears where cattle were used as a medium of exchange and where dairy scenes were often the motif of sculptured panels that adorned public and sacred buildings. In

deed the importance of the cow and her product was so great that many peoples elevated her to the status of a diety and, as in the case of India, nullified the significance of the honor in a welter of quasi religious taboo.

According to legend the continent of Europe was named after the daughter of a Cretian King who was carried across the waters of the Mediterranean on the back of a pure white bull. Most symbolic of all the references to the dairy industry is the stirring biblical description of the Promised Land as a land flowing with milk and honey.

Importance of Processing

Yet while these threads of the dairy story that lead into ages past are interesting their significance is of more concern to the philosopher than to the dairyman of today. It is in the field of modern processing that the present international character of the industry is apparent.

A century ago dairying was more or less a side line with most farmers. The housewife milked the cows and what care they received was incidental to the main agricultural enterprise of grain or meat production. Within the space of a hundred years most of the great developments in the industry have hurdled the barriers of national frontiers and individual prejudice. Quantities of research, carried on in the true scientific, spirit, have resulted in the stimulation and development of the tremendous industry now in existence.

The dates and the names tell the story. A Swiss, Dr. Muller invented a lactometer in 1857. The famous Frenchman, Louis Pasteur paved the way for the modern dairy industry with his studies of microorganisms. A Dane, Professor T. R. Segelcke introduced the thermometer into dairy techniques. Colleagues of Dr. Segelcke, Professor Storch and Professor Fjord contributed information on temperature and refrigeration, use of steam boilers in milk plants, and other studies.

Nestle, a Swiss

The famous name, Nestle, came into prominence when Henri Nestle, a Swiss developed infant foods in 1875. A few years later another Swiss, Dr. Gerber invented a method for determining butterfat only to have it superceded by Dr. S. M. Babcock's device. About the time Sampson's fleet blasted the ancient battle flag of the Spanish Empire into oblivion at Santiago, a Swedish scientist, Dr. Ekberg, invented the roller process for making dried milk. Ekberg's machine was called the "Exsiccator".

The fascinating thing about this parade of inventions and developments that tumbled over each other in an amazing sequence of ideas is the way in which one thing led to another. One cannot read of this period of development without the feeling that here, in truth, was one world. For example, dry milk is reported by Marco Polo in his famous account of the Far East. Although six centuries passed before dry milk was manufactured commercially, the feat was achieved in 1885 by an Englishman named Grimwade. Seventeen years later an American, Percy, applied for a patent which embraced the

Dr. Gustaf DeLaval
SWEDEN

idea of atomizing fluids into heated air. A patent by a German, Stauf, in 1901 was a further improvement over the Percy idea. In one phase of the dairy industry, then, an idea from 13th century China reported by an Italian salesman was applied to a commercial venture by an Englishman which prompted an American to develop a better process while a German contributed further refinements.

Probably one of the single most important pieces of dairy equipment was the separator invented by a Swede, Dr. Gustaf De Laval in 1878. As the industry grew, in consequence of a better product and the phenominal growth of population, new machines came into existence. Many of these machines had no specific originator but were the inevitable process of an industrial evolution. The bottling machines and bottle washers, the clarifiers and conveyors evolved as the industry evolved.

Vacreator International

The two most recent pieces of equipment to be added to the list of dairy machines, the vacreator and the continuous churning process, are in the international tradition.

In a recent article on the continuous process of butter making *Food Industries* lists six processes as follows: The New Way process (Australian), The Alfa (German) and Alfa-Laval process (Swedish), The Cherry-Burrell process (U.S.A.), The Creamery Package process (U.S.A.), The Fritz process (German), and The Senn process (Swiss). The Vacreator with its ability to remove alien odors is a New Zealand development invented by H. Lamont Murray.

Each month there comes to the desk of your editor, dairy publications from all over the world; *The South African Dairyman*, *La Vie Laitiere* from France, *Il Mondo del Latte* from Italy, *The Dairyman* from England, *The Agricultural Gazette* of New South Wales. Some are scientific publications, some are trade papers similar to the *American Milk Review*. All are delving into the secrets of milk itself or problems connected with its processing and marketing.

In England there are projects for increased production and better distribution. The South Africans, even as their brethren across the sea, are tackling the question of health regulation and the establishment of reasonable prices. From Columbia in South America come questions on recent developments in dairy science. And it was only last month that the *Review* carried a fascinating story on the work of DISI in rejuvenating the dairy industry in the Virgin Islands. Tariff relationships with Canada, the foot and mouth disease in Mexico, dry and evaporated shipments to Europe, dairy cattle to Brazil, these and a dozen other events that figure in the day's news attest to the international character of the industry.

The decision of the Dairy Industry Supply Association to form an International organization to be known as the Dairy Industry Society International is in keeping with the historic character of the industry. In a world wracked by war and the rumor of war there are lessons of supreme importance to be gained from the business of milk. Not only do its products rank as the "most nearly perfect food" but in its development, in its attainment of the high plane it now occupies the dairy industry has pooled the knowledge of men from the corners of the world. The high road to international understanding may yet be the route of the milk wagon.

●

ADA DATE CHANGED

Chicago, Ill.—During the conference of the administrative committee of the American Dairy Association here recently, President D. T. Carlson announced a change in the dates for the fall session of the executive and advisory committees, November 17-18 instead of November 10-11.

New Illinois State Fair Dairy Bar Is An Outstanding Success

Members of the Indiana Dairy Products Association Cooperate to Sponsor One of the Fair's Finest Food Projects

AN OUTSTANDING success! That just about sums us all the fine things that were said about the new Dairy Bar in the Dairy Products Building at the 1947 Illinois State Fair. During the Fair of 1946, leaders in the Illinois Dairy Products Association decided to take on the job of serving dairy foods in the newly redesigned building and set to work to plan the details. A separate corporation was organized under the non-profit laws of the State called Illinois Dairy Exhibits, Inc. This was headed up by M. G. Van Buskirk, secretary of the IDPA, with C. F. Deysenroth, executive director of the Milk Foundation, as Vice-President and Secretary, and I. A. Madden, of Springfield, as Treasurer.

Rebuilt Refrigerator Room

Zean Gassmann, Superintendent, Division of Foods and Dairies of the State, made some great improvements in the building and worked closely with the committee in planning for the new Dairy Bar. One of these improvements was a rebuilt refrigerated room for the display of prize dairy products. Beautifully done in marlite, this new display room was the cynosure of all eyes.

The new Dairy Bar was located directly in front of this refrigerated display. People coming into the building from both the North and South entrances were certain to cast their eyes on these two units first.

Miss Bette Baker, home economist of the Milk Foundation, was loaned to manage the Dairy Bar and did an excellent job in selecting fifteen high school girls and three young men to work with her in serving the public. During the ten days of the Fair, more than 100,000 units were sold averaging 10,00 units a day.

Variety of Products

Products sold were: Fresh milk, chocolate drink, and buttermilk, all in 8-ounce bottles at 10 cents; dixie cups, milk and ice cream bars at 10 cents, and half-pints at 20 cents; delicious cheddar cheese and Swiss cheese sandwiches at 25 cents were also served.

The bar was open from 9 a.m. to 9 p.m. and the crew worked in shifts with the greatest number on hand during the busy hours of from 11 a.m. until about 3 p.m.

The sales motif of the Dairy Bar itself was created by C. F. Deysenroth. It pointed up the clean and cool colors of the far north with its banks of snow and ice, all of which generated a real desire for the cooling and nutritious drinks being dispensed. Milk was displayed in large trays, packed with crushed ice, and, of course, the ice cream was served directly from five large cabinets, placed conveniently for quick handling.

Prominent Visitors

Many prominent visitors spoke highly of the way in which the dairy products were handled, among them were Governor Dwight Green, Director of Agriculture Arnold Benson, Conrad Becker, business manager of the Fair, and President Moffitt of the Indiana State Fair. No sooner had the Fair opened than the word went around that the Dairy Bar in the Dairy Products Building was the place to eat—the best on the grounds. Three local Springfield dairies and five ice cream manufacturers serviced the bar with products. All members of the Illinois Dairy Products Association were given credit for sponsoring the project through attractive signs.

The idea as conceived by Mr. Gassmann and Mr. Van Buskirk looked to the creation of good will for the dairy industry. In this respect the project was a distinct success. The cash value of the good will built would, no doubt, run into thousands of dollars. Profits, resulting from the operation, are to be spent in further improving the Dairy Building and The Bar itself.

●

DAIRY BOOSTERS OUTING

The New York State Dairy Boosters, Inc. held their annual outing on the afternoon and evening of September 17th at the Twin Pines Golf and Country Club at Utica, New York.

Afternoon activities included golf, horseshoes and other athletic events. Prizes for the winners were awarded at the banquet held in the evening.

Guests from the New York State Association of Milk Sanitarians which met the following day included E. St. J. Baldwin, President, and W. D. Tiedman, Secretary and Treasurer of the Sanitarians. A number of other guests from the New York State Distributers, Inc. as well as some members of the New England Dairy Mixers were present.

Conservative opinion held that this was "the largest and most successful" outing that the New York State Dairy Boosters, Inc., has ever brought together.

This well designed display sponsored by the Indiana Dairy Producers Association was a center of atraction at Illinois State Fair as the large crowd demonstrates.

Let's talk it over at MIAMI BEACH

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Trouble Shooting — Hot Water and The Better Milking Program

By HERBERT M. EWELL

Pennsylvania Salt Manufacturing Co.

In the article below Herbert M. Elwell of Arlington, Massachusetts demonstrates that there is more to selling than selling. Although the technical excellence of Mr. Elwell's paper is beyond dispute it seems to us that his work has a still greater value as an irrefuteable argument that the salesman is also a teacher.

THE ACCEPTED meaning of the words "Better Milking Program" as they are generally used today, refer to the proper cleansing and sanitizing of utensils, as well as to the modern fast method of milking cows.

From September 29 to October 7, 1946, the Connecticut Guernsey Breeders' Association sponsored what they called a Better Milking Contest at the Danbury Fair. Although it was reported by the Fair Association, as the best educational exhibit at the fair, there were some problems involved that needed to be considered and solved.

These problems were the lack of both cold and hot water which left our utensils wet and generally in an unsatisfactory condition. Now the cold water angle was supply failure which was corrected by trucking an emergency supply but the lack of hot water was no fault of the Fair Association because we agreed to supply our own equipment.

The results of trouble shooting to find the answers to this problem is the reason for writing this paper.

I–Preparation of equipment
- a–Assembling of milker
- b–Preparing other utensils
- c–Preparing milking cart
- d–Operators habits and attire

II–Preparation of cow
- a–Manner of handling cows
- b–Washing and massaging udders
- c–Use of strip cup
- d–Handling equipment

III–Three minute milking technic
- a–Applying teat cup assembly
- b–Checking udders
- c–Removing teat cups, rinsing and disinfecting
- d–Emptying pail and checking timers
- e–Ease of operation

IV–Handling the milk
- a–Cleanliness in handling
- b–Cooling procedure
- c–Preventing contamination
- d–Lack of waste

V–Care of equipment
- a–Cleaning utensils and storing parts
- b–Care of milker cart and general milk housekeeping

To accomplish this we built special stalls for 6 cows. Separate from this and a short distance away we built a milk house with only partial sides so that the public could view the complete operations. This milk house was made large enough to allow for duplicate equipment because two contestants were operating at the same time.

The problems came to light when we gave our exhibit the final inspection after each day's contest.

In order to score each contestant on the five points mentioned above you can understand that it was necessary to have a rather complete milk house, to include 1, cooler; 2, Sanicart; 3, open table; 4, utensils rack; 5, solution rack; 6, hot water heater; 7, two compartment tank; and 8, storage for chemicals, brushes, etc. Our thinking regarding what constitutes a proper milk house would match very well with the thinking of milk-minded men anywhere. As to the way the milk house was equipped, I feel reasonably sure that no one would criticize that, either, from any outward signs.

Determined Standards

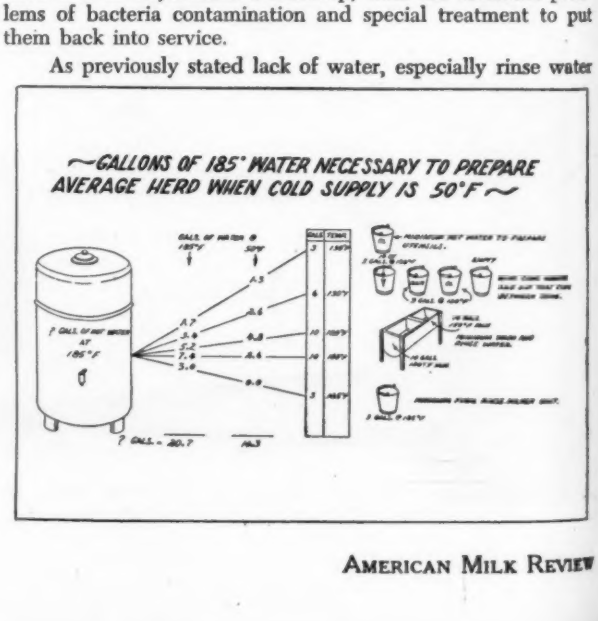
Now as to the procedures used in the complete contest we designated in advance what they should be and it was agreed that the standards used would all have to be basic and acceptable, not only to the State of Connecticut, but in line with the thinking of any State Official. Especially was this true with reference to any point where different equipment or chemicals might be used. Our standards were all based on the reasons for using the various methods and not on any special system or device.

To accomplish this we collected the direction sheets of a great number of manufacturers and control agencies and set-up our standards for operating this contest. We then called in the avaliable state inspectors and after a very complete discussion set out to build the set-up necessary to carry out the contest.

When all the details were completed we called in the State Inspector and asked him to score the complete set-up and post the inspection sheet in the milk house. We were scored down on one point. We did not have posted in our milk house a certificate indicating that the cows connected with this project were Bangs' tested.

Despite the fact that we had a completely equipped milk house and our contestants scored all above 80 and many above 90 the final examination of the milk house, which was to be in the public view all day, did not match up with the standards set in our agreement with the Fair Association. As previously indicated the utensils were pretty well streaked, some discolored, considerable evidence of moisture and had they been left in that condition for the full time of the contest would have had an objectionable build-up, with the resultant problems of bacteria contamination and special treatment to put them back into service.

As previously stated lack of water, especially rinse water



hot enough to do the job, took our attention. We checked our heaters with thermometers and raised the thermostats in each instance to capacity. We checked our cold water supply because due to shortage of total supply we had to use water from two different sources. All this got us by but left us with this decision before we accepted their invitation back for another year, (namely), we must increase the amount of hot water supply or re-check our standards and see if we are asking for more hot water than we should.

This is where our trouble shooting data began, some of which is in a graphic form to give you the results.

How Much Hot Water

With only two factors to determine, namely amount of hot water necessary on the one hand and the accepted number of uses necessary on the other, we decided to question both of them at the same time. Therefore our question is **how much hot water, at what temperature, is necessary to prepare an average herd assuming that we use the modern fast method of milking by machine and care for utensils properly?**

Let's accept 50 deg. F. as the temperatures of the cold water supply and that the hot water heater thermostat is set at 185 deg. F. and working properly.

These assumptions make our question read—**How much hot water at 185 deg. F. is necessary to handle a better milking program, when the cold water supply is 50 deg. F.**

Let's review the accepted standards for hot water use when operating a better milking program. If you will look at my first chart. Note that it requires 1.7 gallons of 185 deg. F. water and 1.3 gallons of 50 deg. F. water to make a pail of 3 gallons at 130 deg. F. which is the minimum amount of chlorinated water necessary to sanitize utensils, before milking. Now this could be cold water as far as sanitizing is concerned but the better milking program requires hot water to stimulate let-down of the milk, consequently this pail should be about hand hot or 120 deg. F. when it reaches the udders, therefore, this water must be hot and the one solution will do both jobs, provided the loss in temperature of the water is not too great during the winter months as the result of sanitizing cold utensils.

To carry out the program between cows, namely dipping the teat cups in clear and then chlorinated water, you will note that it requires 3.4 gallons of 185 deg. F. water and 2.6 gallons of 50 deg. F. water to make up the two pails necessary, namely 6 gallons at 130 deg. F. Although there is work being done at the present time to try and eliminate at least some of this rinsing operation, until we have such facts we cannot decrease the volumes of water here.

The hot water necessary for washing and rinsing needs some explanation in a little more detail as the amount of water that I have noted as a proper amount in each tank was only established after a great deal of work was done. It is generally agreed that farm utensils to be properly washed should be at least partially immersed and brushed while under water containing a soapless cleanser. It is also agreed that the volume and strength of solution necessary to do this job must also be good enough when through to allow for the tanks to be properly cleaned. Before we agreed on the 10 gallon volume in each tank we washed utensils in varying amounts of water from as little as 5 to as much as 25 gallons. Too little water results in a poor wash job, as too little of the utensil becomes partially immersed and they are not revolved enough to wash them thoroughly under water. Perhaps the worst factor is that the sink becomes dirty because of lack of sufficient volume to take up all the organic materials introduced. Too large a volume of water prevents the use of the bottom of the tank to support the utensil while brushing. The buoyant effect of the water in the tank causes the utensils to spin or move with the brush. We used round bottom tanks 30"x22¾"x15¾" and using various types of utensils determined an amount of water that would allow for proper washing by placing them on their sides so that water flowed into the necks until half full. A satisfactory job could be done in volumes from 10 to 20 gallons. The figures on my chart are based on minimum amounts, therefore are figured as 10 gallons for both wash and rinse tanks.

It requires 5.2 gallons of 185 deg. F. and 4.8 gallons of 50 deg. F. water to make up the 10 gallons in the wash tank at 120 deg. F. which is satisfactory for washing by hand.

The temperature of the rinse water is 150 deg. F. because of the need of drying utensils as quickly as possible. Using a volume of 10 gallons the larger utensils can be handled above the water and spun around several times for complete rinsing. A moments contact with the air and such rinsed utensils can very easily be racked to drain and dry.

The storage of the milker unit may or may not add another use for hot water. I am going to include a final hot water rinse in my figures, because there seems to be a difference of opinion as to the proper storage—I am referring to wet or dry storage—If wet storage is used, the machine units, after washing and rinsing should be assembled and put in a solution rack. However directions for the machine used in this contest called for a final rinse of hot water so my item indicates that it requires the 3 gallons of 185 deg. F. water as a minimum. If you will look at the totals you will find that it requires 20.7 gallons of water at 185 deg. F. to carry out this minimum milking program.

These figures refer to specific temperatures as far as the hot and cold water are concerned and because the temperature of cold water may vary in different localities and thermostats may be set differently by various manufacturers, I have prepared a graphic chart which will supply the figures for any hot water temperatures from 140 deg. to 200 deg. F. when the cold water temperatures are from 35 deg. to 80 deg. F. The final mixed volume of water shown on this chart is based on my findings that 10 gallons is a good amount to use, however if any of you men wish to revise my volumes in either wash or rinse tanks you may use the same chart. Simply multiply any of the results times 10 and use as percentage figures on any volume of mixed water you care to use. For example: Suppose you wanted to know how much hot water at 150 deg. F. would be necessary, when cold water is 50 deg. F. to make 15 gallons of 120 deg. F. water. The graph shows 7 gallons of hot and 3 gallons of cold for a 10 gallon volume. Simply multiply 7 times 10 which equals 70 per cent of the 15 gallons or 10.5 gal. of hot water and 3 times 10 which equals 30 per cent of the 15 gallons or 4.5 gallons of cold water.

Perhaps it would be more convenient if you used the following formula for determining the amount of hot water necessary for any final mixed volume regardless of the temperatures.

$$\text{gals. hot water} = \frac{\text{Temp. final} - \text{temp. cold}}{\text{temp. hot} - \text{temp. cold}} \times \text{Hot Water} = \frac{\text{Hot Water}}{\text{1—for 1 gallon final volume}} \times 10 \text{ gal.} =$$

10—for 10 gallons final volume
20—for 20 gallons final volume
etc.

Problem

Example

How much hot water for 10 gallons final volume when

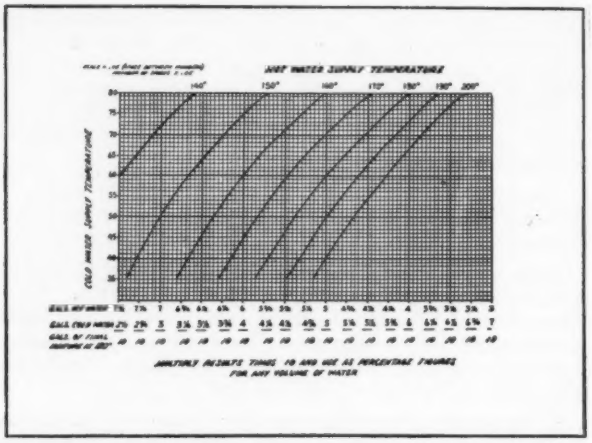
$$\text{Hot Water} = \frac{120-40}{180-40} \times 10 \text{ gals.} =$$

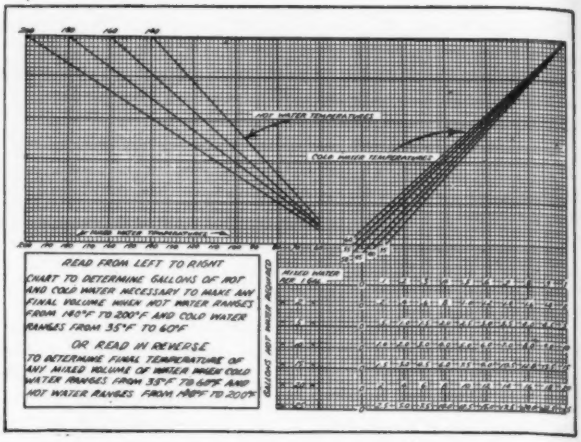
$$\frac{80 \times 10}{140} \text{ or } \frac{8 \times 10}{14}$$

hot water = 180°F.
cold water = 40°F.
Final water = 120°F.

$$\frac{80}{14} = \frac{40}{7} = 5.7 \text{ gals.}$$

There are a couple of obvious questions which we should ask at this point. How long does it take to heat the water necessary for a better milking program? Using our findings




HOT WATER TEMPERATURE
COLD WATER TEMPERATURE
READ FROM LEFT TO RIGHT
CHART TO DETERMINE GALLONS OF HOT AND COLD WATER NECESSARY TO MAKE ANY FINAL VOLUME WHEN HOT WATER RANGES FROM 140°F TO 200°F AND COLD WATER RANGES FROM 35°F TO 60°F
OR READ IN REVERSE
TO DETERMINE FINAL TEMPERATURE OF ANY MIXED VOLUME OF WATER WHEN COLD WATER RANGES FROM 35°F TO 60°F AND HOT WATER RANGES FROM 140°F TO 200°F

of 20 gallons at 185 deg. F. and the cold supply at 50 deg. F. the following chart clearly indicates 6½ K. W. H. assuming that the heater unit is based on 1000 watt element which is 1 K. W. If the element was only 500 watts (½ K. M.), as is the case in most smaller heaters, obviously it would require 13 hours.

Where there are so many electric hot water heaters and because there may be a variation in the temperature of the cold water supply as well as a variation in the setting of thermostats, the next chart includes the range of cold water supply from 35 deg. to 60 deg. F. when hot water temperatures may range from 120 deg. to 200 deg. F. and the tank capacity may vary from 10 gallons to 50 gallons. This looks slightly complicated from the previous chart, however, it is just as easily read.

Here again it may be more convient if you use the following formula for determining the K. W. H. necessary for any final volume.

$$\text{K. W. H. equals} \frac{\text{(lbs. in gallon water)} \; 8.33 \times \text{Temp. Rise}}{3415} \times \begin{matrix} 1 \text{ for } 1 \text{ gal. final} \\ 10 \text{ for } 10 \text{ gal. final} \\ 20 \text{ for } 20 \text{ gal. final} \\ \text{etc.} \end{matrix}$$

(1 K. W. H. equals 3415 B. T. U.)

Problem
How many K. W. H. for heating 10 gals. final volume when hot water equals 180°F. hot water equals 180°F.

Example

$$\text{K. W. H. equals } \frac{3.33 \times 140 \times 10 \text{ gals.}}{3415}$$

$$\text{so } \frac{1166.2}{3415} \times \text{gals.}$$

$$\text{equals } \frac{11662}{3415} \text{ or } 3.41 \text{ K.W.W.}$$

The second question has to do with the recovery in heaters. What is the tank temperature when the cold water is added automatically such as in the float type heater or in the bucket type which only delivers a hot water volume equal to the amount of cold water that is added? From a previous chart we recorded that a minimum of 5.1 gallons of water at 185 deg. F. are necessary to prepare for milking. The day my charts were prepared a small amount of water besides the amounts charted was used for washing hands and rinsing an odd pail, so that the actual volume of water replaced was 6 gallons, with a temperature of 50 deg. F. This addition reduced the tank temperature to 104 deg. F.

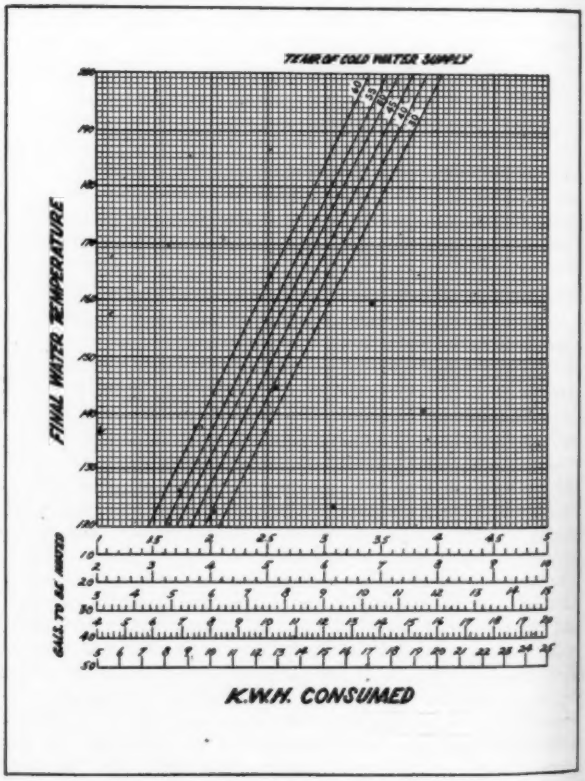
These figures alone only give part of the picture because heater thermostats could vary up or down from 185 deg. F. and cold water temperatures could be up or down from 50 deg. F., so let's refer to my next chart which covers the complete range of both hot, cold and mixed volume temperatures.

The box of figures in the lower right hand corner represent—Gallons of hot water to make up any volume of mixed water from 1 to 25 gallons, when cold water ranges 35 deg. to 60 deg. F. (marked cold water temperatures) and the hot water ranges from 140 deg. to 200 deg. F. (marked hot water temperatures) and the final mixed water temperatures might range from 60 deg. to 200 deg. F.

Now to chart the example stated just a moment ago, where six gallons of 50 deg. F. water were added to a ten gallon tank, which had only four gallons of water left at 185 deg. F.

The final mixed water would be ten gallons, (the heater size). Starting at the 10 gallon figure, read to the right to four, which equals the amount of hot water left, then read up to the 50 deg. F. line, which is the cold water temperature, then read to the left to 185 deg. F. which is the hot water temperature and down to the final mixed water temperature. The answer is 104 deg. F.

It is obvious at a glance that if the usable temperatures of the water for handling a better milking program are 120 deg. to 185 deg. F. and our total volume needs are upwards of 32 gallons of water, then our total hot water volume must



"The bigger the family—the better the service"

And now— bigger production, too, means more containers for you!

At last we can offer you just about all the cups and containers you want—and in the sizes you need.

Output is soaring, thanks to increased production facilities and to the ending of many raw material shortages.

You'll find that Mono products meet your requirements. Sturdy sidewalls give maximum protection, and they're attractively decorated for eye-pleasing appeal. These easy-to-open-and-close containers and cups are built for automatic machine filling—made to suit your needs for a superior package.

Contact our nearest sales office today for further, more specific information.

Mono cottage cheese containers available in most sizes and quantities. Our complete line of attractive paper containers has been widely used for years by leading cheese makers, dairies and retail food stores. Space-saving nested cups are available in 6, 8, 12 and 16 oz. capacity. Also 2, 5 and 10 lb. tubs for bulk packing.

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CONTINENTAL PAPER DIVISION

PAPER DIVISION Headquarters
330 W. 42d St., New York 18, N. Y.

MONO NESTED AND CYLINDRICAL CONTAINERS

COMBINATION PAPER-AND-METAL CANS

FIBRE DRUMS The Container Co., Van Wert, Ohio

Sales offices in all principal cities

be greater than 10 gallons to insure a water supply of any where near proper operating temperatures.

Although this chart was intended for the specific purpose just mentioned, it will be noted that it may be read to advantage from left to right to determine the amount of hot and cold water necessary to obtain any final mixed water temperatures. For example if you want a final mixed volume of 120 deg. F. water–Start at that point and read up to whatever hot water temperature you are using–then to the right to whatever cold water temperature exists and down to the mixed hot water temperature, and your answer is the gallons of hot water necessary. It is obvious that this figure subtracted from the total mixed water figure will represent the volume of cold water.

For those of you who prefer to have an easy formula for figuring out a specific example, I have prepared, two charts–one to determine temperature of hot water supply when drawn off is replaced with cold water as follows:

$$\text{Average final temp. in hot water tank} = \text{Temp. hot water} - \frac{\text{gals. added cold water}}{\text{gallons tank capacity}} \times (\text{Temp. hot water} - \text{Temp. cold water})$$

Problem			Example
Temp. hot water		185°F.	$\frac{6}{10}$
Temp. cold water	—	50°F.	185°F — — x 185°F — 50°F equals
Hot water tank			10
Capacity in gals.	—	10	$\frac{6}{10}$
Gals. water replaced	—	6	185°F — — x 135°F equals
			185°F 81°F equals 104°F

The second formula chart is to determine temperature of water in any tank when any volume of hot and cold water are mixed.

$$\text{Average Final Temp.} = \frac{\text{Gals. hot water used}}{\text{Gals. total vol. in tank}} \times \left\{ \begin{matrix} \text{Temp. hot supply} \\ \text{minus} \\ \text{Temp. cold supply} \end{matrix} \right\} \text{plus Temp. cold supply}$$

Problem			Example
Gals. hot water used	—	4 gals.	$\frac{4}{10}$
Total volume water			(— x (185°F — 50°F) plus 50°F equals
used in wash tank	—	10 gals.	10
Temp. hot water		185°F.	$\frac{2}{5}$
Temp. cold water		50°F.	(— x 135°F) plus 50°F equals
			54° plus 50 equals 104°F.

Let's go back a little and check the possibility of recovery within our electric heaters during the specific time of milking –This time factor can vary as well as water temperatures so will base my figures on a period of one hour.

For example, if 6 gallons of water are drawn out of a ten gallon tank, which is heated with a 500 watt element–thermostat being set at 185 deg. F., and cold water supply being 50 deg. F. is added in equal volume–namely 6 gallons.

What is temperature of the mixed water after the cold is added?

By formula:

$$\text{Final temp. equals } 185 \text{ minus } \frac{6}{10} (185 - 50) \text{ equals}$$

$$185 - \frac{6}{10} (135) \text{ equals}$$

$$185 - \frac{810}{10} \text{ equals } 185 - 81 \text{ equals } 104°\text{F.}$$

(2) How much time is required for recovery, back to 185°F.

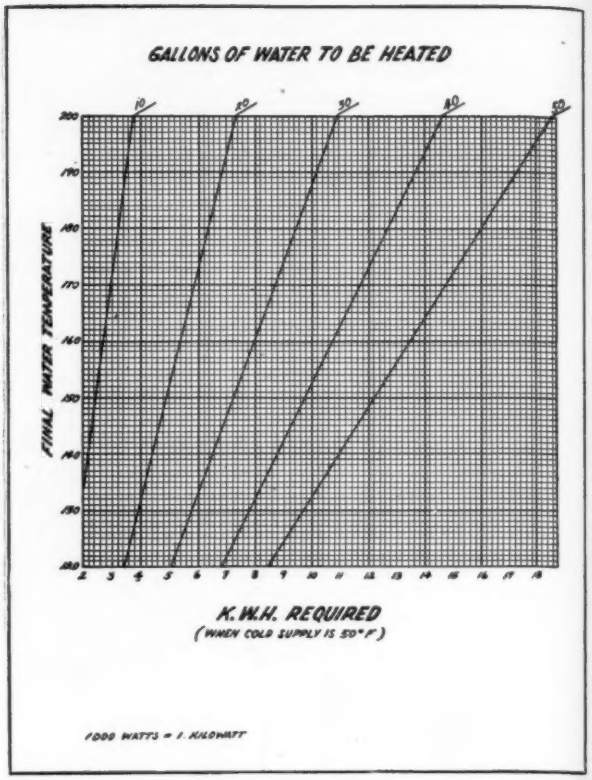
By formula:

$$\text{K. W. H. equals } \frac{(185-104)}{8.33 \times 81 \times 10} \text{ equals } \frac{3415}{674.73 \times 10} \text{ equal } \frac{3415}{6747.3} \text{ equals } 1.97 \text{ / K. W. H.}$$

1.97 plus is based on 1000 Watt element—therefore a 500 Watt element equals 2 x 1.98 or 3.96 K. W. H.

If it requires 4 K. W. H. to raise the temperature of the water 81 deg. F. (185 deg. F-104 deg. F.) then in one hour the rise is $\frac{81}{4}$ = 20 deg. F. therefore in one hour the temperature is 104 deg. F. plus 20 deg. F.

Conclusions:



(1) A total of 32 gallons of water are necessary to carry out a better milking program on an average 20 cow herd.

As an example this volume might consist of 20.7 gallons of water at 185 deg. F. and 11.3 gallons at 50 deg. F.

(2) Charts and formlulas have been presented which enable the reader to determine gallons of hot water ranging from 140 deg. to 200 deg. F. and cold water ranging from 35 deg. to 60 deg. F. to prepare 10 gallons or multiple thereof, of water at 120 deg. F.

(3) Charts and formula have been given which enable the reader to determine the K. W. H. necessary to heat water to temperature of 120 deg. to 200 deg. F. when cold water ranges from 30 deg. to 60 deg. F. and heater sizes range from 10 gallons to 50 gallon.

(4) Charts and formula have been given which enable the reader to determine the gallons of hot water necessary to make any final volume when hot water ranges from 140 deg. to 200 deg. F. when cold water ranges from 30 deg. to 60 deg. F. for any number of mixed gallons of water.

(5) Formula has been presented to determine temperature of hot water when draw off has ben replaced with cold water in any type of heater.

It is firmly believed that it is necessary in the Better Milking Program to use water of the correct temperature and volumes and this paper attempts to make recommendations which will aid the sanitarian in helping the producers to successfully carry out this program.

In the preparation of this paper I wish to acknowledge with many thanks the very great technical assistance rendered by my many goods friends, especially

Messrs.–W. P. Hinckley, Sales Engineer of the Cherry-Burrell Corporation, Boston Division and W. A. Hadfield, Sanitarian and Chemist of the Pennsylvania Salt Manufacturing Company, B-K Division.

First Come First Served

Low Wall Type "MV"
100-Gallons Capacity

WE HAVE
100 GALLON
Vapor-Film Pasteurizers
AVAILABLE
For Immediate Delivery
NOW!

ORDER YOURS TODAY!

Here's your chance to prove RIGHT NOW just what the famous DAMROW Vapor-Film principle of pasteurizing can do to help boost your production, protect milk quality and keep operation costs lower.

We have 83 of these pasteurizers ready for delivery IMMEDIATELY. Each is the last word in modern engineering, built of heavy polished stainless steel, heavily insulated, and equipped with large off-center 3-blade agitator, and new adjustable ball feet.

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This DAMROW Pasteurizer heats faster because there is no need to first heat a large amount of water. No hot spots or burnt flavor are possible with Vapor-Film heating, because steam does not directly contact the milk tank—only the condensed "vapor-film." And because no water is used, you have no lime deposits, waterstone or sand to build up in the heating chamber to cut down efficiency and cause service expense.

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DAMROW
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DAMROW BROTHERS COMPANY
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RUSH Complete details and prices on the new DAMROW Type "MV" Vapor-Film Pasteurizers, 100-gallon size—for IMMEDIATE DELIVERY!

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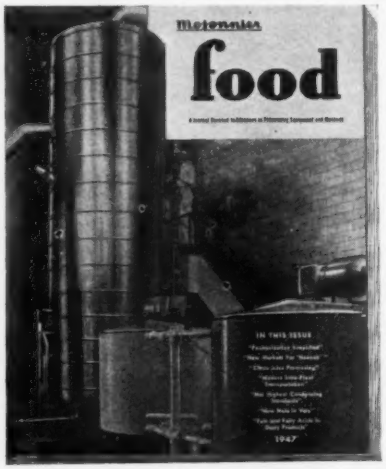
Dairy Processing Developments

When Science and Engineering bend their skills to the same advanced objectives, then industry stands ready to complete the picture with bettered production. Alert dairymen recognize the high value of such cooperation in this age of strong demand and active competition.



Cover page of Mojonnier's most recent issue of "FOOD" 24 page booklet dealing with methods and equipment.

Numerous advances in methods and equipment are interestingly set forth in the latest issue of Mojonnier's "FOOD", 24 page brochure illustrating a series of new installations of processing equipment lately adopted by leading American and foreign dairies.

Combining scientific material with factual descriptions by engineering experts, this looked-for issue whose front cover is reproduced herewith, is copiously illustrated with actual photographic reproductions containing a world of information concerning latest scientific advances in processing and handling.

A copy of "FOOD" may be had by addressing the home office of Mojonnier Bros. Co., 4601 W. Ohio St., Chicago 44, Ill., U. S. A.

●

"Ice Cream Song" Popular

Chicago, Ill.—The new "Ice Cream Song" is arousing wide-spread interest, even before it has been released to public use, according to President Milton Hult of the National Dairy Council, who says it represents "undoubtedly one of the most excellent mediums for publicity and promotion of dairy products that we have seen in a long time."

The "Ice Cream Song" is a catchy ditty by Bill Brownell and Dick Klaus of Radio Station WJW, Cleveland. Musicmakers, Inc., Philadelphia, is producing it in sheet and record form, for release in the early fall.

Assistance in the promotion of the song — which tells of the super-duper delights of a double-dip sundae — was begun early in June by President Hult "because of the tremendous advertising value this song possesses for the benefit of the dairy industry."

President Hult has just been advised by Rudy Rack, general manager of Musicmakers, that requests for advance copies of the song have come from all over the country. Recording of the song is being done by the Glenwood Quartet on Lark Records, a new label.

Affiliated units of the Dairy Council, in 50 of the key marketing areas of the nation, are furthering the promotion.

"It's a grand opportunity," said President Hult, "to utilize a splendid promotion that has been developed by two radio men. We know that if the nation begins humming the 'Ice Cream Song' that sales are going to jump, so we are happily lending our assistance toward that end."

●

DRIVER TRAINING PAYS OFF

(Continued From Page 18)

scoring on the field is negative. A perfect score would be zero while there is no limit to the score if the driver is unskilled. The passing grade, as noted above, is 50.

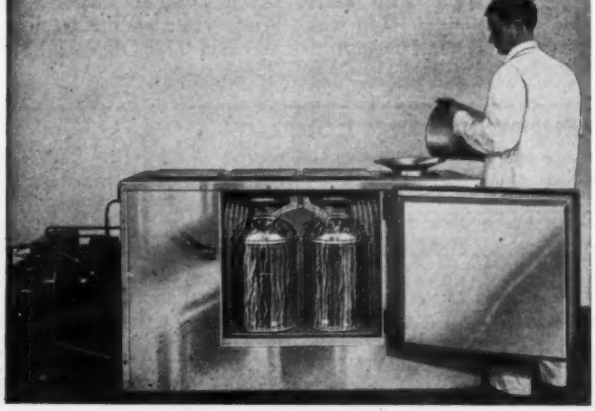
Traffic Test

"When the applicant has demonstrated to the instructor in charge that he can operate on the field, he is taken on an 8¾ mile road test through city and suburban traffic.

"Here all operations are noted by the instructor and again all scoring is negative. A perfect road test score would be zero, while a total failure score would be 547. Our passing grade is 25. The figures in parenthesis on the score sheet are weighted figures based on our past accident record and would, of course, vary with other companies. Each operation is repeated often enough to reveal any bad driving habits which the applicant may have been able to conceal while on the training field.

"The driver training program is completed during the class room work given the driver during his sales training period. Our program is not fool proof, nor will its adoption automatically mean the end of all accidents, but it will, if intelligently applied, give any fleet operator better trained and therefore safer drivers."

The *Review* will print the mechanics of the Suppiee-Wills-Jones Driver Training Program in the November issue



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IT'S THE T-33
FOR MILK COOLING — FOR CREAM COOLING

So Easy . . . So Convenient and Fast. No heavy cans to lift. You merely place the empty cans in the cabinet, place the milk strainer in the proper opening on top of cabinet and pour your milk through the strainer.

ZERO MANUFACTURING COMPANY
General Office — Washington, Missouri

There's Nothing Quite Like KRIM-KO for Building Profits and Volume

Says E. C. Fogg, Jr., President, LAND O' SUN DAIRIES, INC.

"In addition to giving us a fine volume of business at Land O' Sun Dairies here in Florida," says E. C. Fogg, Jr., President, "we find Krim-Ko is one of the most profitable items we've ever sold.

"As soon as you get folks to taste KRIM-KO's delicious chocolate flavor, the rest is easy. Our sales were doubling, even quadrupling, two weeks after KRIM-KO reached our market."

Take a tip from Mr. Fogg and introduce Krim-Ko to your customers. By actual taste-tests it's America's 2-to-1 flavor favorite. Use KRIM-KO to build your profits and volume in a hurry. For full information about this business booster, write today.

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26th and Chestnut Sts., Oakland, Calif.
100 Sterling Road, Toronto, Canada

KRIM-KO CHOCOLATE DAIRY DRINK

PAMPHLETS AND BULLETINS

Sanitary Fittings and Tubing

Cherry-Burrell Corporation has packed a great deal of information into their new 20 page booklet. The publication, known as Bulletin G-443 presents the complete line of C-B sanitary fittings and tubing. A double page spread shows the full line plus large individual illustrations of each fitting and valve with appropriate dimension drawings and specifications.

Junior Achievement Booklet

A comprehensive compilation describing the purpose and status of Junior Achievement, Inc. The organization is an effort on the part of the American business community to teach high school young people the principles of free enterprise through a plan of learning by doing.

The booklet has 32 pages. The national headquarters are located at 345 Madison Avenue, New York 17, N. Y.

Humidity Control

A discussion of the problems of humidity control published by the Surface Combustion Corporation of Toledo, Ohio. The booklet, 8 pages, is illustrated and carries just about the right amount of text.

The Lanham Act

Coca-Cola Company has a valuable pamphlet here that deals with the new law on protecting trade-marks. The Lanham Act became a reality on July 5, 1947. By means of text and good illustrations the booklet shows clearly what the intent and operation of the law means. Well worthwhile. Write The Coca-Cola Company.

Oakite News Service

Has a number of good articles including one on cleaning maintenance that ought to prove of value to the dairy industry. Oakite Products, Inc., New York, N. Y.

Plastic Flooring

A color folder about PLASTILE . . . the new laminated vinyl floor tile, made from TYGON plastic, a U. S. Stoneware product is available upon request to the company.

Fin and Pipe Coil Engineering

An engineering data book providing all the fundamentals of pipe and fin coil calculations has been published by the Rempe Co., of Chicago.

The book has been compiled by engineers especially for draftsmen and designers to provid information necessary for laying out pipe and fin coils for heating and cooling application.

Treatment of Municipal and Industrial Waters

Containing 94 pages, this bulletin has sections on softening, purification, taste and odor removal, corrosion control, boiler feed water treatment, the use of alkalies, chlorine and other chemicals and equipment, as well as lists of standard reference works on many of the subjects covered.

This new bulletin is Technical and Engineering Bulletin No. 8, "Alkalies and Chlorine in the Treatment of Municipal and Industrial Waters", and is offered without charge by the Advertising and Sales Promotion Department of Solvay Sales Corp., of N. Y.

Effects of Bad Lighting

The new "Rainy Night" Booklet just released by The Edwin F. Guth Company of St. Louis, emphasizes the importance and value of Good Lighting by pointing up the effects of Bad Lighting. It defines the symptoms and describes the hazards of Bad Lighting with carefully drawn illustrations of driving on a dark rainy night. Free copies are available upon request.

●

E. W. Haley Sales Director

Appointment of E. Wayne Haley as director of sales for the Southern Alkali Corporation was announced today by W. I. Galliher, executive sales manager for the Columbia Chemical Division of Pittsburgh Plate Glass Company and the Southern Alkali Corporation. Southern Alkali is a subsidiary of the Pittsburgh firm.

Associated with Southern Alkali since 1935, Mr. Haley has served as assistant director of sales during the past twelve years. As director of sales, Mr. Haley succeeds Eli Winkler who will continue with the firm in the capacity of sales consultant.

As director of sales for the alkali firm, Mr. Haley will maintain headquarters at 30 Rockefeller Plaza, New York City. Southern Alkali also maintains sales branches at Dallas, Houston, and Corpus Christi.

Mr. Galliher stated that H. W. Gleichert, director of sales for the Columbia Chemical Division, will continue in that capacity. Mr. Gleichert's headquarters will remain at Fifth Avenue and Bellefield Street, Pittsburgh, where executives sales offices of both the Columbia Chemical Division and the Southern Alkali Corporation are maintained.

LEFFEL SCOTCH MARINE BOILER AND STOKER UNITS

Generate Dry Low Cost Steam with the Proven Service and Safety of Leffel Scotch Marine Boiler and Leffel Ram Type Stoker

We build stokers for other makes of Scotch type boilers.

Leffel boilers are ideally suited for oil or gas firing.

Available in sizes 6 to 250 H.P. inclusive normal (not inflated) rating, – and built with many plus qualities exceeding A.S.M.E. and State Boiler Codes.

Write, wire or phone us for full particulars.

THE JAMES LEFFEL & CO. Established 1862 **Springfield, Ohio**

See Leffel Boiler Ad on Page 67 Dept. MR

From Manhattan to Knob Hill

Chicago, Ill.—The dairy industry was recently given its greatest advertising impact in many years as the American Dairy Association inaugurated its first showing of dairy food posters on wheels with more than 5,500 express trucks across the nation moving the message to America's millions.

Every daylight hour, a half million advertising impression will be made for the dairy industry by these new sales-creating, business-building ADA full-color dairy food posters,

A common sight from New York to San Francisco is this poster carried by 5,500 express trucks over the nation's highways.

according to the announncement of Owen M. Richards, general manager of the ADA. In picture and story, the new ADA outdoor advertising program will feature milk, butter, cheese, cream, evaporated milk and ice cream from time to time.

They're colorful, they're big, they're striking, they're everywhere, says the dairy industry spokesman in describing the mobile dairy food ads appearing on the vast array of express trucks that go where the people are in cities, towns and hamlets across the country.

Milk First Poster

"MILK"—Everybody's Drink" is the forceful sales slogan that pops out of the ad now moving among the millions as the first in a series of posters scheduled for every-other-month appearance on the nation's express trucks during the coming year. In natural colors, the pictorial shows happy-faced Young America sipping straws dunked in a giant glass of refreshing milk. The illustration is the prize-winner which appeared in Seventeen Magazine.

Whether moving along busy streets or parked at business stops, the express truck ads are viewed again and again by people in all walks of life who are potential customers for dairy foods, Richards points out. The poster covers one complete side of he truck and gains undivided attention because of exclusive showing.

●

Ice Cream Stabilizer

Dr. Eugene McCauliff, Technical Sales Director of Glyco Products Company, Inc., of Brooklyn, N. Y., and New Martinsville, W. Va., has announced that volume production has begun of its Aldo 33, a basic element for use in ice cream stabilizers and for improving over-all quality of ice cream.

DAMP-TEX
ENAMEL
FOR WET
EQUIPMENT
and WALLS
FRIEND
OF THE PLANT
OWNER... WHO HAS
A WET SURFACE
MAINTENANCE PROBLEM
The Damp-Tex system of painting kills rust, rot, fungus and bacteria. Stops deterioration. Can be applied on any paintable surface, wet or dry, with equal ease and efficiency... changing dingy, rough light-blotter interiors into glistening porcelain-like beauty. One coat covers. Resists acid, alkali, corrosive gases and oxidation. Dries overnight without flavor-tainting odor into waterproof film. Comes in white and colors.
Write for our trial offer.
LIQUID PORCELAIN-LIKE
DAMP-TEX FOR
WET
OR DRY
SURFACES
STEELCOTE MFG. CO. • ST. LOUIS, MO.
THE CREAMERY PACKAGE MFG. CO.
National Dist. of Damp-Tex Products to the Dairy Industry
General Office: 1243 W. Washington Blvd., Chicago
ALSO SOLD IN CANADA: CREAMERY PACKAGE MFG. CO. OF CANADA, LTD., 267 King St. W., Toronto 2, Ontario.
Canadian Manufacturer: Standard Paint & Varnish Co., Windsor, Canada

LEADING MILK DEALERS RECOMMEND

WALLMAC

STAINLESS STEEL MILK CARRIERS

For home delivery and store carry-outs where every-other-day delivery is desired. Your customer saves many steps in using the handy 4 and 6 qt. carrier.

Will fit in any refrigerator —cannot rust — encourages prompt return of bottles.

Tops in Advertising Value

Your name will be imprinted at no extra charge in 100 lots on front and back of this permanently bright stainless steel carrier.

DAIRY SIGNS AND DECALS

Stock decals are immediately available — or can be made up to your original design and copy. Colors are bright, fresh and long lasting. Just dip in water, slide into position on any type surface.

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THE WALLMAC COMPANY

Dept. MR 9 MIDDLEBRANCH, OHIO

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DOWN GO REFRIGERATION COSTS...

CHECK THE AMAZING SAVINGS-VALUES of the MID-TEXAS ALUMINUM MILK CASE!

✓ **SAVES ON REFRIGERATION:** Studies have proved that the 5-lb. Mid-Texas Aluminum Milk Case requires more than **5 times LESS** refrigeration over a four-year period than a 13-lb. wooden or steel case—a saving of thousands of tons of costly refrigeration!

✓ **SAVES ON HANDLING:** By eliminating tons of dead weight on your trucks, the compact Mid-Texas Aluminum Milk Case cuts your transportation costs by **more than half** over a four-year period of operation.

✓ **COMPLETE SANITATION:** The Mid-Texas Aluminum Milk Case does not absorb water or milk, does not rust, and is quickly and easily cleaned by dipping in any recommended aluminum cleaner—keeps a clean, attractive appearance.

✓ **LONGER-LASTING:** Sturdily constructed of aluminum alloy—harder to damage, easier to repair—AND better able to withstand long, rough usage.

✓ **LOW-PRICED:** The Mid-Texas Aluminum Milk case is priced on an average of only a few cents more than wooden cases — an extra cost quickly recovered through savings.

Now Available in Half-Pint (Tall and Squat), Pint, Quart and Half-Gallon Sizes for Square Bottles — Contact Your Jobber or Wire for Specifications.

MID-TEXAS MFG. CO. Fort Worth Texas

Cornell Conference Impressive

G. M. Trout Sees Homogenized as Most Palatable Beverage — High-Temperature Short-Time to Predominate, Weber Says

"HOMOGENIZED MILK has been received by the consumers beyond the most fancied dreams of those advocating the process," Dr. G. M. Trout, Professor of Dairying at Michigan State College told more than 350 industry representatives at the Dairy Industry Conference held at Cornell University, September 4 and 5.

One of thirteen speakers to address the conference Professor Trout declared that good homogenized milk, gives the public the most palatable beverage that milk dealers have been able to put on the market thus far. "The day when emphasis was on a heavy cream line is gone," the speaker said, adding that "for children, particularly, the absence of heavy concentrations of 'unpleasant appearing fat' tends to attract rather than repel consumers."

Dr. Trout has made exhaustive studies of homogenized milk both in this country and in Canada. He was emphatic in his warning to dairymen that good quality milk is an essential pre-requisite to good homogenized milk. The speaker also insisted that processing problems which include development of rancidity, sedimentation, increased bacterial count, inadequate homogenization, and possible high viscosity present a challenge to the dairyman. "Any operator can produce reasonable good plain milk," Dr. Trout said, "But it takes a real dairymen to produce good homogenized milk."

Dr. Trout pointed out that health officials were quick to see many virtues in the new product. Homogenized milk must be pasteurized. It may be pasteurized at a higher temperature and for a longer time than regular pasteurized milk. Raw milk cannot be mixed with homogenized milk without developing rancidity. Clarification is a companion process with homogenization. The process of homogenization has been educational to the milk producer making him more milk conscious. The bacterial count of commercial homogenized milk is comparable to that of regular pasteurized milk. The fat content of homogenized milk may be easily and reliably determined by the modified Babcock procedure. Homogenized milk is an important factor in increased milk consumption.

Looking at the future of High-Temperature Short-Time Pasteurization C. W. Weber, Senior Milk Sanitarian in the New York State Department of Health, predicted that "High-Temperature Short-Time pasteurization will be the common method of pasteurization in all but the smaller plants until some entirely new method is developed." Mr. Weber sees the need for technical improvements inn HTST equipment and anticipates that inn a short time, within the space of months, these improvements will be accomplished facts. Specific recommendations included "discarding those rubber pants worn around the edge of each plate for something more durable and more easily laundered". Mr. Weber also pointed out the desirability of stainless steel fittings in place of the soft metal used in flow diversion valve and pump.

In addition to his belief that HTST would replace all other forms of pasteurization Mr. Weber said that

The temperature may go higher and the time will be shortened, thereby reducing the size of the holding chamber.

Health officials and operators will demand a greater degree of standardization of design and uniformity of requirements, but will welcome and accept changes of proven merit.

Thermal and safety controls will be more sensitive, responsive and dependable. Instruments will be simplified and com-

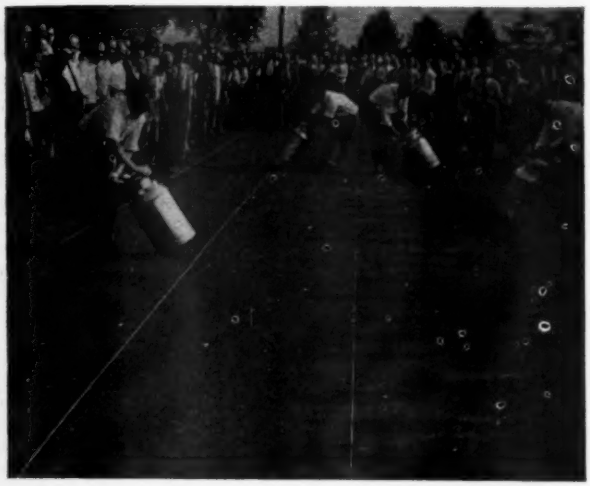
bined to control and record both temperature and time of treatment automatically.

All surfaces contacted by the product will be streamlined and finished so that less milk solids will accumulate. Mechanical washing will be improved, thereby reducing manual labor and cleaning cost.

A wish but not a prediction; a practical means or method of starting and finishing an operation without the inter-mixing of milk and water.

Other speakers included A. H. Robertson and J. C. Marquardt of the New York State Department of Agriculture and Markets, L. E. Bober, Babson Bros., Chicago, Ill., Hazel Hauck, Cornell University, C. D. Dahle, Pennsylvania State College, H. G. Hodges, Veterinary College, New York State Agricultural College at Cornell, F. W. Graves, New York State Department of Health and members of the Cornell dairy staff.

Features of the two day program were an ice cream tasting demonstration and contest in which members of the conference were provided with four different scoops of vanilla ice



Paul Bennett, extreme left, churns to a spectacular victory in the milk can rolling contest. Bennet clipped 3.2 seconds off old record.

cream and asked to grade it one, two, three, and four. This was easily one of the most pleasant phases of the conference, according to participants.

The Second Annual New York State Milk Can Rolling Contest was won in straight heats by Paul Bennett, manager of the Sheffield Farms plant in Homer, New York. Bennett, a stocky redhead, who has been with Sheffield since 1934 trundled home with a clanking 11.6 seconds for the hundred foot course, giving a thorough rinsing to his nearest competitor, former title holder Irving C. Holland of Holland Farms, Brooklyn, N. Y. Bennett homogenized Holland's old record by 3.2 seconds.

The conference was sponsored by the Department of Dairy Industry at Cornell and was arranged by a committee of faculty members headed by Professor A. C. Dahlberg. Other members of the committee included F. V. Kosikowsky, Dr. R. F. Holland and Dr. E. S. Guthrie.

●

15 Building Maintenance Problems

The "15 most urgent building maintenance problems" are illustrated and discussed in an informative folder published by Stonehard Co. of Pennsylvania. Included in this guide are the solutions to such problems as leaky roofs, worn flashings and gutters, rough concrete and wood floors.

The NEW
"KING"
Stainless Steel
ALL AIR-PRESSURE
Operated
Automatic Milk Sediment Tester
(MODEL K-P) Patent applied for

UNRIVALED!

Pistol-grip Control permits operation with ONLY one hand.

UNIQUE!

1. Draws the official one pint (16 fluid oz.) milk sediment test sample exactly — neither more nor less.
2. Anticipates dairy inspection requirements, and designed to ease the dairyman's burden.
3. Combines all tried and proven features of previous milk sediment testers with POWER and AUTOMATIC OPERATION.

INCOMPARABLY SUPERIOR

The Super DeLuxe Milk Sediment Tester.
Speed! Economy! Durability! Class!
Foolproof Lifetime Service
Accurate, Reliable Results
Uniformity of Tests

A PRECISION INSTRUMENT IN THE MOST POSITIVE SENSE OF THE WORD—FOR PLANTS OF ALL SIZES

Also available in *New Stainless Steel, Hand Operated Model K-C/S.*

Our Models K-B and K-C are old favorites of the dairy industry. Models K-P and K-C/S are equipped with *new "KING" HEAD LOCK* (patent applied for) whereby tester must be at bottom of can in order to make the test.

All new and old "KING-STS" milk sediment tester parts are interchangeable.

"E-Z LOCK" Milk Sediment Test Record Cards, with the patented disc-locating circle, are STANDARD—officially recognized everywhere.

STS KING COMPANY

SEDIMENT TESTING SUPPLY COMPANY
Sole Producers and Distributors
20 E. JACKSON BLVD. CHICAGO 4, ILL.

ANCHORED—

To *Seal-Leak* goodness — yes, there are multiplied thousands of clever, up-to-the-minute milk plant operators from coast to coast, who wouldn't like to try to get along without them.

Soft, tough, resilient, forest-sweet Beaverite stock — by-the-millions automatic cut that fits like a glove — sanitary Neostyle unit-packed cartons — and that handy country-wide Jobber hook-up that means you never run short —

Sure, there's a reason for *Seal-Leaks*. Once tried — always used. Why not get the convenient habit, too?

Ask your Jobber for Seal-Leaks by Name

BEAVERITE PRODUCTS, INC.
Beaver Falls, New York, U·S·A·

For Improved ICE CREAM
Delicious—Nutritious
Use Nature's Color and Vitamin A

GBI

'PROVALAC'
Reg. U. S. Pat. Off.
CAROTENE DAIRY EMULSION

'Provalac' provides a convenient way to automatically obtain natural Carotene or "June" cream color and to fortify your ice cream with Vitamin A activity. Emulsified, then sterilized and hermetically sealed in tins each containing 500,000 U.S.P. units of Vitamin A activity in the form of Carotene, 'Provalac' keeps, is ready to use at any time—requires no special equipment. It does not contain fish oils or added color.

Be first to offer your customers uniformly delicious, nutritious ice cream the year 'round. They will appreciate it. 'Provalac' is also advantageous in cheese manufacture.

Other GBI Products

'YELLO-A' CAROTENE BUTTER COLOR
Trade Mark

Colors your butter the natural way with Carotene—the same color Nature supplies when cows are on fresh green pasture—also supplies natural vegetable Vitamin A activity—no fish oils or added artificial color used. Ideal for cheese also.

'FRIGIDRY' DAIRY CULTURES—6 TYPES
Trade Mark

'FRIGIDRY' cultures provide maximum uniformity and stability—are easy to use—mother culture ready after one generation—saves time—saves money—avoid trouble. Special types available for Buttermilk, Cottage Cheese, Acidolphilus, Bulgarian, Yoghurt, Butter.

Available at Jobbers—Write for information

GENERAL BIOCHEMICALS, INC.
2 LABORATORY PARK CHAGRIN FALLS, OHIO

AG Economists Hold Meeting

World Trade Theme of Annual Meeting at Wisconsin—See Cut in Exports of Cheese and Evaporated Milk

Foreign markets, in one aspect or another, high-lighted the annual meeting of agricultural economists held at Green Lake, Wisconsin, in September. The perennials; land, statistics, credit, marketing and parity were also in full flower but the bloom that held everyone's attention was overseas demand. Trade with Europe and Asia has been discussed at other meetings of the association but at no time during the past 25 years has the situation been so alluring or even disquieting.

Talking on "The World Food Situation," Albert Viton, of the International Emergency Food Council, emphasized that until 1949 the World can use all the food that the United States can produce. Following 1949 or 1950—that is two or three years hence—United States farmers may have surpluses unless some fundamental changes are made in world trading arrangements.

This viewpoint contrasts sharply with that held in some quarters which visualized with alarm large agricultural surpluses with the ending of the war and which has tenaciously held to that idea.

Just as the privations of World War I made a terrific impact on peoples and forced governments to adopt a policy of agricultural self-sufficiency during the '20s World War II had its aftermath. Although food is concerned, the consequences were potentially far greater. Governments in other lands, especially the so-called backward ones, have assumed the responsibility of preventing starvation among their people. Both India and Mexico, for example, have curbed the export of edible oils so that more may be available for home consumption.

The dollars and cents of exports was handled by O. Zaglits of the United States Office of Foreign Agricultural Relations. Trade has been running at the export rate of 20 billions annually. Foreign countries currently have only 17 billions available for purchase so that a 3 billion cut is in prospect. Most of the shrinkage will take place in merchandise although some "luxury" agricultural items such as fruit and cheese will be cut.

The trend of events may be inferred from the statistics on exports given in the June issue of "Foreign Agricultural Trade". The monthly rate of exports of evaporated milk for 1946-47 was 48.3 million pounds compared with 72.8 million pounds for 1945-1946; for cheese the corresponding figures are 12.8 million in 1946-47 compared with 20.8 million for the preceding year.

The potentialities in world trade with food from the United States being a major item are tremendous. Trade from here on, however, is the important relationship. Shipments for relief should be diminishing. Purchases financed by United States loans should be reduced. Exports should be paid for by imports. In plain words—TRADE.

●

Holstein-Friesian Award

Brattleboro, Vt.—For the second consecutive year a Progressive Breeder's Certificate has been awarded to Karl S. Hartshorn, Lebanon, N. Y., by The Holstein-Friesian Association of America. Only 122 Holstein breeding establishments in the nation have received this honor, and Mr. Hartshorn is one of 7 breeders in New York to qualify. The Progressive Breeder's award is the highest honor given to members of the national Holstein association and it is given in recognition of a well-balanced herd improvement program developed over a period of years. The Hartshorn herd has been tested for production in the Herd improvment Registry program of the

National Holstein Association for 4 consecutive years. The last test year was completed September 30, 1946, with the 31-cow herd averaging 398 pounds of butterfat and 10,575 pounds of milk in 296 days on 2 milkings daily.

The herd also has been classified for type and scored 82.5.

The current award is based on a herd of 43 animals of which 13 have freshened. Each of these 13 is a home-bred animal, that is, born and developed at Mr. Hartshorn's farm.

The purpose of the Progressive Breeder's Registry is to stimulate interest in breed improvement and to give recognition to those herd managers and owners whose practices in Holstein breeding have met the high standards set by the national Holstein association.

The other New York Holstein breeders to be so honored are: George W. Chapman, Ontario; Beniah Morrison, Rensselaer Falls; Owen D. Young, Van Hornesville; The H. R. Wait Co., Auburn; George H. Comings, Bainbridge; and Daniel I. Mayne, Rochester.

●

Connecticut Victor in Judging

University of Connecticut's Dairy Products Judging team tasted out a narrow victory over dairymen from Cornell and Ohio State at the Eastern States Exposition, Springfield, Massachusetts on September 16. Tied at the end of the contest, Connecticut was declared the winner after it was decided to give first place to the team having the least sum of individual standings in the judging of separate products.

Cornell was favored for first place in the judging of ice cream while Connecticut took the udder class with a victory in milk. Thomas L. Kimball and Donald B. Martin took the top honors in ice cream and milk respectively.

Truman R. Cavanaugh, University of Vermont dairy student led the field in cheese while Donald Martin of Connecticut duplicated his victory in milk with a winning card in butter. Martin's double victory placed him at the top of the heap for all products.

The Eastern States Dairy Products Judging Contest was begun in September, 1922. Over the years the high teams have been well distributed among the universities participating. The University of Connecticut has won the contest six times, the University of Massachusetts and the University of New Hampshire have each won it four times, Vermont three times, Michigan State College twice, Cornell and Penn State have won it once each.

A handsome perpetual trophy donated by the Eastern Dairy Manufacturing concerns is awarded for one year's keeping to the winning team.

Summary

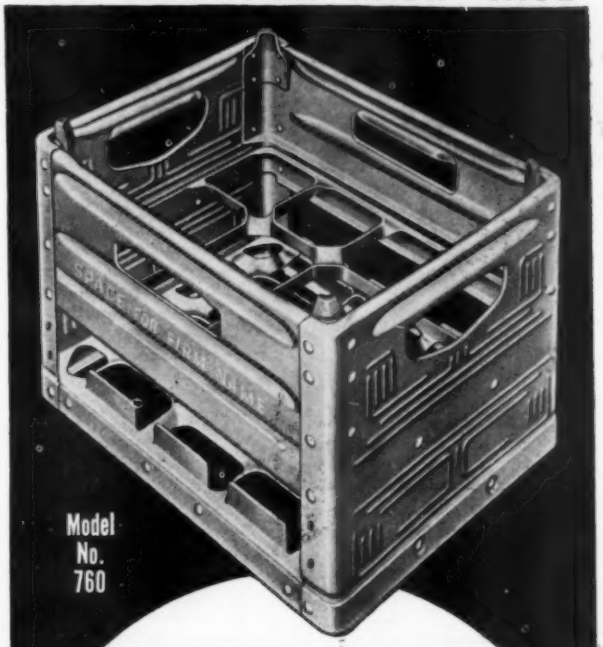
ALL PRODUCTS

Rank		Grade	Sum of individual standings
1.	University of Connecticut	11	439.61
2.	Ohio State University	11	471.11
3.	University of Vermont	11	471.34
4.	Cornell University	13	.....
5.	University of Massachusetts	13	.....
6.	University of New Hampshire	21	.....
7.	University of West Virginia	27	.....

Individual

Rank		
1.	Donald Martin, University of Connecticut	134.42
2.	Thomas R. Kimble, Cornell University	140.16
3.	Thomas R. Kimble, Cornell University	140.16
3.	Donald R. Frost, Ohio State University	143.09
4.	Alan F. Tobie, University of Connecticut	147.17
5.	Louis A. Resi, University of Vermont	149.10
6.	Andy B. Jones, Ohio State University	152.00
7.	Sherman K. Sprague, University of Vermont	152.98
8.	Raymond W. Campbell, University of Massachusetts	156.41
9.	Evelyn Fish, University of Connecticut	158.00
10.	Alvin S. Rosenberg, Cornell University	159.59

THE ERICKSON MILK CASE



Costs about a third more than wood . . .

but Production Costs and plant "Overhead" will begin to shrink

Immediately!!

. . . before you realize it your savings will have paid back, not only the EXTRA COST, but also the entire FIRST COST.

. . . with the daily savings still going on months and years after the case has paid for itself.

Something to consider when the time comes to reorder another shipment of cases.

All-Aluminum

The Case With Extra Years of Low-Cost Service "Built-in"

C.E. Erickson CO., INC.

DES MOINES, IOWA

THE NEW Ilreco ALUMINUM
PAPER BOTTLE CASE

- Individual bottle supports prevent leakers.
- Less than half the weight of the old style wood case.
- Made of heavy gauge extruded aluminum alloy.
- Special telescoping stacking feature.
- Open bottom design permits easy cleaning.
- Refrigeration costs cut 75%.

Available in 24 and 20 Quart Sizes

Patented

ILRECO Aluminum Case for Square Glass Bottles
Available for 12 quarts, 20 pints, 24 tall half pints and 20 squat half pints.

FIRST in Aluminum Milk Bottle Cases

ILLINOIS CREAMERY SUPPLY CO.
715 S. DAMEN AVE. • CHICAGO 12, ILL.

For Greater Product Fexibility and Greater Profits

ROGERS
CONDENSING, EVAPORATING AND SPRAY PROCESS DRYING EQUIPMENT

Progress and profits in the dairy industries point to product diversification. More and more plants are installing Rogers Condensing Equipment for the manufacture of condensed or evaporated whole milk, condensed skimmilk, and ice cream mix. Other plants are finding ready markets for dry skimmilk, dry whole milk or cream produced in a Rogers Spray Process Drying Plant. Multi-purpose dairy plants are always in a favorable position to take advantage of best market prices. We'll gladly send you detailed facts of how you can increase your own sales volume and profits with Rogers Equipment.

Rogers Hot Wells, 3 Vacuum Pans, and 2 Rogers Spray Process Milk Drying Units in the Chippewa County Co-Operative Dairy at Bloomer, Wis.

Since 1883 "The Choice of Dairyland"

C. E. ROGERS COMPANY, 8731 WITT ST., DETROIT 9, MICH.

AIR AS A SOURCE OF EXTRANEOUS MATTER

(Continued From Page 27)

shows the absolute necessity of tight covers, and the probable advantage of parchment under lids. It also stresses the need for keeping cream cans covered in the station during the filling period, especially during fly season. Operators have been very negligent about this in the past, and it has also occurred on creamery docks during sampling and grading of cream. Naturally similar precautions will have to be taken on the farm and during transit.

In dairy establishments the installation of air conditioning equipment for the filtration of all air would be another possible preventative measure. General good housekeeping and sanitation practices would minimize possible contamination with air-borne particles. The fundamental control of the more objectional extraneous matter lies in the control of the rodents and insects themselves. Perhaps some extraneous matter is unavoidable and the more one works with it, particularly microscopically, the more one wonders.

●

MIAMI BEACH

(Continued From Page 8)

at the Robert Richter Hotel adjacent to registration and information headquarters.

The Miami Beach meeting will be a DISI milestone. Plans for future development as well as recapitulations will be the outcome of the first annual meeting.

The Milk Industry Foundation meeting which opens on October 30 will bring together "the largest group of milk industry people ever assembled in the South". Raymond Skinner of the Forest Hill Dairy, Memphis, Tennessee, president of the Foundation will preside at the General Sessions and in addition will deliver his presidential address. Other officers who will take an active part in the convention include F. H. Kullman, Jr., vice-president; E. N. Brawner, treasurer; Col. B. F Castle, executive director; and E. B. Kellogg, secretary.

The sectional meetings will be held every afternoon during the three days of the convention, October 30, 31 and November 1.

The International Association of Ice Cream Manufacturers, with a glittering array of talent, will get underway at 10 A.M. Monday, October 27. The conference will open up with the heavy artillery. Quentin Reynolds, world famous author, war reporter, lecturer and star of radio will appear on the first days program preceded by William C. Foster, Under Secretary of Commerce. Other prominent speakers who will address the ice cream men include Robert Rosenbaum, President of DISA, Benjamin C. Brown, President of IAICM, Gordon Cook, Editor, Cook's Publications, Morris I. Pickus, President of The Personnel Institute, A. J. Claxton, Vice-President of Meadow Gold Dairies, Ridgeway Kennedy, Jr., Abbotts Dairies, Owen Richards, American Dairy Association, and Hon. Everett Dirksen, Congressman from Illinois.

Tuesday and Wednesday a special Accounting Session will be held by the Controllers' Council of the International Association of Ice Cream Manufacturers.

Complete programs of the conventions are listed below.

●

DAIRY INDUSTRIES SOCIETY INTERNATIONAL
MONDAY, OCTOBER 27

8 A.M. to 1 P.M.—OBSERVATION OF COLLEGIATE STUDENTS' INTERNATIONAL CONTEST IN JUDGING DAIRY PRODUCTS

This, the 26th in a series of annual contests, sponsored by Dairy Industries Supply Association and American Dairy Science Association, will be resumed for the first time since the war. Some 20 colleges and universities from the U. S. A. and Canada will compete in individual and team judging of milk, butter, ice cream, cheese and all products. Visitors from outside the U. S. A., are invited to observe the Contest

1 P.M. to 4 P.M.—MOTION PICTURES
Documentary films, commercially and governmentally produced, picturing how to achieve quality in dairy products; how to increase milk production; the prevention and treatment of livestock diseases; modern dairy factory processes; increasing consumption of milk and dairy products. All interested parties are invited.

TUESDAY, OCTOBER 28

9:15 A.M.—TOUR OF NEARBY MODERN DAIRY FARMS
A tour of two or more dairy farms—giving dairy enterprisers from outside the U. S. A. an opportunity to inspect at close range modern dairy farming methods. Luncheon will be served during the tour at Hialeah Park. Visitors from abroad may obtain complimentary tickets at the registration desk in Robert Richter Hotel.

EVENING—OBSERVATION OF HONORS AWARDS FOR STUDENTS' CONTEST AT DINNER SPONSORED BY INTERNATIONAL ASSOCIATION OF ICE CREAM MANUFACTURERS IN CONJUNCTION WITH ADSA AND DISA
Awards to the winners of the Students' Contest will be made—silver cups to the winning teams; gold, silver, and bronze medals to the first, second, and third place individual winners. Tickets available through IAICM, DISA and DISI.

WEDNESDAY, OCTOBER 29

10 A.M.—DISI BUSINESS MEETING
. . . including:
(1) Reports of Committees; (2) Election of Officers and Directors

12M.—LUNCHEON
. . . including:
(1) Introductions of and brief responses by dairy leaders from abroad
(2) Presentation of world dairy outlook
Open to all interested parties

EVENING—OPEN FOR ATTENDANCE AT BANQUET OF INTERNATIONAL ASSOCIATION OF ICE CREAM MANUFACTURERS

THURSDAY, OCTOBER 30

10 A.M.—SEMINARS
Led by the following DISI committees—with attendance open to all DISI members and other interested parties:
Committee on Area Development
Consumer Education Committee.
Committee on Exhibits
Round-table discussions concerning:
(1) Development of techniques for stimulating dairy enterprise in less advanced areas
(2) Stimulating consumption of milk and dairy products in areas of relatively greatest need.
(3) Development, routing, and use of educational displays internationally

1 P.M.—LUNCHEON
Panel discussion led by various authorities in their respective fields on worldwide delivery prospects for dairy farm and dairy processing equipment and supplies. Open to those interested in international supply situation.

4 P.M.—SEMINARS
Led by the following DISI Committees—with attendance open to all DISI members and other interested parties:
Technical Advisory Committee and its Publications and Products Sub-committees
Committee on Standard Terminology
. . . including round-table discussions concerning:
(1) Distribution of multi-language handbooks for milk producers and dairy processors
(2) Compilation af an international glossary of technical and practical terms

8 P.M.—DINNER
. . . including
(1) Summarization of DISI meetings and prospects for the future
(2) A featured speaker
All interested persons invited

FRIDAY, OCTOBER 31

9:15 A.M.—TOUR OF NEARBY MODERN DAIRY PLANTS
A tour of three or four nearby dairy plants. Luncheon will be served during the tour at one of the plants. Visitors from outside the U.S.A. are invited and may obtain tickets at the registration desk in Robert Richter Hotel.

1 P.M. to 4 P.M.—MOTION PICTURES
Movies of international interest, depicting various phases of the dairy industry, completing the program begun on Monday afternoon. All interested are invited.

EVENING—OPEN FOR ATTENDANCE AT BANQUET OF MILK INDUSTRY FOUNDATION

ALL WEEK—REGISTRATION AND INFORMAL CONFERENCES AT INFORMATION CENTER IN ROBERT RICHTER HOTEL
PHOTOGRAPHIC DISPLAYS telling the story of dairy enterprise country by country

MILK INDUSTRY FOUNDATION—PLANT SECTION
TENTATIVE PROGRAM

THURSDAY, OCTOBER 30, 1947

2:00—Appointment of Committees

2:05—Recruiting and Training New Personnel for the Milk Plant and the Effect of Educational Programs on Plant Personnel
John Rossdeutcher, Bowman Dairy Co., Chicago, Ill.

2:45—Effect of "Screening" in Hiring of New Employees and Practical Benefits of Job Analysis
Stanley Monk, H. P. Hood & Sons, Inc., Boston, Mass.

3:30—The Colleges' Training Program for Dairy Plant Workers
Dr. B. L. Herrington, Cornell University.

FRIDAY, OCTOBER 31, 1947

2:00—Methods of Cleaning Milk Plant Equipment
John Perry, Sealtest, Inc., New York City.

2:45—Progress reports from the Sanitary Standards Subcommittee
T. J. Kullman, Bowman Dairy Company.

Progress reports form the Task Committee on Dairy Waste Disposal
W. A. Dean, Jr., Bowman Dairy Company; or Dr. H. A. Trebler, Sealtest, Inc.

3:00—Information Trading Posts—(See below)

Sturdy, punishment absorbing flexibility built into Superior SQ Crates means protecting "give" or "flex" when subjected to shock. This feature alone greatly prolongs the useful life of Superior SQ Crates. Furthermore, Superior's crate flexing prolongs the life of bottles. Shocks, earmarked as potential bottle breakers, are absorbed by the crate and fail to reach the bottles. Use Superior SQ Crates and you will agree that these crates are superior in fact as well as name.

Write for descriptive literature and specifications on the complete line of Superior Dairyware.

SUPERIOR METAL PRODUCTS COMPANY
509 FRONT AVE., SAINT PAUL 3, MINN.

SATURDAY, NOVEMBER 1, 1947

2:00—Work Simplification in the Dairy Industry (motion picture)
Harold G. Dunlap, H. P. Hood & Sons, Inc., Boston, Mass.

2:45—Advantages, Disadvantages and Cost of Cooling Dairy Products by the use of City Water, Sweet Water, Brine and Direct Expansion
Speaker to be assigned.

3:30—The Effect of Refrigerator storage in the Plant on the keeping Qualities of Pasteurized Milk
Prof. L. H. Burgwald, Ohio State University, Columbus, Ohio.

INFORMATION TRADING POSTS

A. MILK PROCESSING
CO-CHAIRMEN: R. J. Winning, Sheffield Farms Co., Inc., New York City; R. J. Quirie, White Brothers Milk Co., Inc., N. Quincy, Mass.
- **Electric pasteurization**
- **Cleaning short time pasteurizers**
- **Clarify hot or cold?**
- **Homogenizing cream**
- **Use of plastic cream**
- **Eliminating air in homogenized milk**

B. EFFICIENT OPERATION
CO-CHAIRMEN: R. J. Ramsey, Ramsey Laboratories, Cleveland, Ohio; W. D. Barrett, Whiting Milk Co., Boston, Mass.
- **Efficiency for the small dealer**
- **How to lower costs per unit**
- **How large should a plant be?**
- **How to balance equipment investment for greatest efficiency**

C. ENGINEERING PROBLEMS
- **What size boiler should be used?**
- **Steam for refrigeration**
- **Platform loading system of route trucks and transportation units vs. conveyor system**

D. CONTAINERS
CO-CHAIRMEN: E. C. Folkers, Meadow Gold Dairy, Pittsburgh, Pa.; John Rossdeutcher, Bowman Dairy Co., Chicago, Ill.
- **Paper vs. glass in the plant**
- **How to change over from round to square bottles**
- **Bottle washers—soaker or brush**

LABORATORY SECTION—TENTATIVE PROGRAM
THURSDAY, OCTOBER 30, 1947

2:00—Appointment of Committees

2:05—Advantages and Limitations of Quaternary Ammonium Compounds as Sterilizing Agents
Dr. G. J. Hucker, Cornell University.

2:45—Dairy Cleaners—their Constitutents and Functions
Dr. H. A. Trebler, Sealtest, Inc., Baltimore, Md.

3:30—Practical methods of quality control for small plants
Prof. F. J. Doan, Penn State College, State College, Pa.

FRIDAY, OCTOBER 31, 1947

2:00—In-company Training Programs for Technical Men
Dr. H. F. Judkins, Sealtest, Inc., New York City.

2:45—PANEL (5 minutes each followed by question from floor)
Control of thermodurie bacteria
A. J. Powers, Borden's Farm Products, New York City.
Coliform organisms, their measurement and control
Methods of testing homogenized milk
Dr. G. M. Trout, Michigan State College; or Prof. P. S. Lucas, Michigan State College.

SATURDAY, NOVEMBER 1, 1947

2:00—The Identification of Off Flavors in Milk
Dr. D. V. Josephson, Ohio State University.

2:45—Control of buttermilk, sour cream and starters
Dr. B. W. Hammer, Iowa State College; or V. H. Nielsen, Iowa State College.

3:30—High Temperature, Heat Treatment of Milk
Dr. I. A. Gould, University of Maryland.

MILK SUPPLIES SECTION—TENTATIVE PROGRAM
THURSDAY, OCTOBER 30, 1947

FORUM ON FARM QUALITY MILK CONTROL
E. G. Cushman, Clemson College, South Carolina, Moderator.

2:00—1. Sanitizing Milking Machines
Dr. A. C. Dalberg, Cornell University, Ithaca, N. Y.
2. **Off Flavors in Milk**
Prof. G. M. Trout, Michigan State College, Lansing.
3. **General Practical Procedure for Farm Quality Milk Control**
C. C. Foard, Biltmore Dairy Farms, Inc., Asheville, N. C.
4. **A Quality Program for the Small Plant**
Mr. Mosley, Mosley Laboratories, Indianapolis, Ind.

FRIDAY, OCTOBER 31, 1947

2:00—1. The Price Outlook and Its Effect on Producers, Distributors
Dr. Leland Spencer, Cornell University, Ithaca, N. Y.
2. **What Minimum Production per Cow should be Recognized in Determining Cost of Milk Production?**
Dr. C. W. Pierce, Pennsylvania State College.
3. **F. F. A. (Future Farmers of America) Activities**
4. **Election of Officers**

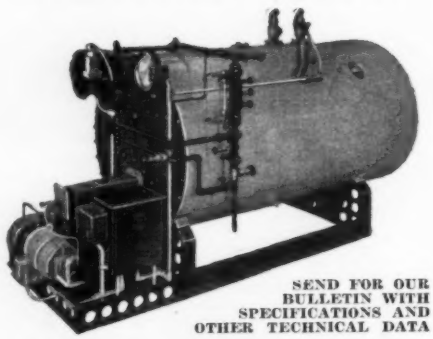
SATURDAY, NOVEMBER 1, 1947

Tour of Florida dairy farms emphasizing artificial insemination, pasture improvement, feeding program with explanation of citrus pulp as part of the feeding program.

INTERNATIONAL ASSOCIATION OF ICE CREAM MANUFACTURERS
FIRST GENERAL SESSION
Beach Theatre
Monday, October 27, 1947, 10:00 A.M.
Benjamin C. Brown, Chairman

Invocation
Rev. R. Wiley Scott, Miami Beach Community Church, Miami Beach, Fla.

STEAM
AT LOW COST



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In other words can he prescribe your Milk with Safety? You know when the Doctor prescribes a Milk Diet for some anxious Mother's baby,

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THE PASTEURIZATION OF MILK CAN'T CURE A SICK COW

SO BE SURE IT'S PURE. The "Strip Cup" is NOT a Test, that he, or your Producer, can depend on. To Safeguard the Quality of your Product, see that Producers make regular use of those fast acting, accuracy guaranteed—

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with the Green Spots. Keep a supply on hand for their use. Make the regular test of every cow a MUST. Be on the Doctor's PREFERRED LIST, not his BLACK LIST. If your Jobber can't supply you, write—

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President's Address
Benj. C. Brown, President, IAICM, Brown's Velvet Ice Cream, New Orleans, La.

A Message from DISA
Robert Rosenbaum, President, DISA, David Michael Co., Philadelphia, Pa.

An Address
William C. Foster, Under Secretary, U. S. Department of Commerce, Washington, D. C.

"Your Report"—Narrated by
Quentin Reynolds, Author, Lecturer, Film and Radio Commentator, New York, N. Y.

SECOND GENERAL SESSION
Auspices, Ice Cream Merchandising Institute, Inc.
Beach Theatre
Tuesday, October 28, 1947, 10:00 A.M.

Benjamin C. Brown
President, Presiding.

There's Clover in Turnover
Gordon Cook, Editor, Cook Publications, New York, N. Y.

Changing Pints Into Quarts
Morris I. Pickus, President, The Personnel Institute, Inc., New York, N. Y.

You Have to Make a Profit
A. J. Claxton, Vice-President, Meadow Gold Dairies, Pittsburgh, Pa.

THIRD GENERAL SESSION
Beach Theatre
Wednesday, October 29, 1947, 10:00 A.M.
Benjamin C. Brown, Chairman

America's Favorite (Moving Picture—Showing begins at 9:30 A.M.)

Resolutions Committee Reports

Treasurer's Report
Claud Parcell, Treasurer, IAICM, Farmers Creamery Co., Fredericksburg, Va.

Know Your Costs
Ridgway Kennedy, Jr., Abbotts Dairies, Inc., Philadelphia, Pa.

ADA Program
Owen Richards, American Dairy Assn., Chicago, Ill.

Fighting for Free Enterprise
Hon. Everett Dirksen, Congressman from Illinois, House of Representatives, Washington, D. C.

Nominating Committee Reports

Adjournment

CONTROLLERS' COUNCIL, IAICM
Theme!—The Use of Accounting to Improve Profit
Tuesday, October 28, 1947
Vanderbilt Hotel
Presiding—H. W. Schuelke, Chairman, Controllers' Council

12:30 P.M.—Luncheon and Get-to-gether

1:30 P.M.—Cost Accounting, A Present-day Necessity
H. W. Schuelke, Central Dairy Products Co., Oklahoma City, Okla.

2:00 P.M.—Controlling Raw Products and Partly Finished Products in the Plant
A. H. Bayer, General Ice Cream Co., Schenectady, N. Y.

2:30 P.M.—Controlling Processing Operations
To be announced.

3:00 P.M.—Controlling Finished Products
J. M. Brown, H. P. Hood & Sons Co., Boston, Mass.

3:30 P.M.—Appointment of Nominating Committee
General Discussion of Questions submitted

CONTROLLERS' COUNCIL
Wednesday, October 29, 1947
Vanderbilt Hotel
Presiding—H. W. Schuelke, Chairman, Controllers' Council

12:30 P.M.—Luncheon and Get-to-gether
Election of Officers of the Controllers' Council

1:30 P.M.—The Possible Value of Using Cost Accounting in Preparing Corporate Financial Statements
Charles S. Rockey, Charles S. Rockey & Co., Philadelphia, Pa., Member of Committee on Accounting Procedure, AIA.

2:00 P.M.—The Efficient Use of Truck and Cabinet Space
L. C. Anderson, General Ice Cream Corp., Schenectady, N. Y.

2:30 P.M.—The Intelligent Application of Costs and Statistics in Sales Management
John Shipley, Abbotts Dairies, Philadelphia, Pa.

3:00 P.M.—The Accountant's Place in Management
O'Neal M. Johnson, International Association of Ice Cream Manufacturers, Washington, D. C.

3:30 P.M.—General Discussion of Questions Submitted

Members of the Council who planned meetings are:
L. C. Andersen (Chairman), General Ice Cream Corp., Schenectady 1, N. Y.
J. S. Bloom, Abbotts Dairies, Inc., Philadelphia 47, Pa.
W. C. Blunk, Golden State Co., Ltd., San Francisco 11, Cal.
H. N. Webster, The Borden Co., New York 17, N. Y.
C. M. McClean, Philadelphia Dairy Products Co., Philadelphia 5, Pa.
James A. Procter, Dixie Ice Cream Co., Lexington, Ky.
H. C. Thomas, Harrington & Co., Dushore, Pa.
Philip Saunders, H. P. Hood & Sons, Boston, Mass.
W. R. Wright, Beatrice Creamery Co., Chicago 3, Ill.

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NAME DAIRY PAPER EDITOR

George C. Lee, associate editor of the *Dairymen's League News,* has been named editor, effective October 1, it has been announced by Henry H. Rathbun, President of the Dairymen's League Cooperative Association.

He succeeds Dewey J. Carter, editor of the *Dairymen's League News* for the past 25 years, who is retiring.

Mr. Lee, whose home is Liverpool, N. Y., has had extensive editorial experience, particularly in agricultural journalism, and previously served as writer for some of the leading newspapers and press associations. He became associate editor of the dairy publication in 1927.

"Mr. Lee's varied editorial experience and long association with the *Dairymen's League News,* and his thorough knowledge of dairymen's problems, assures a continuance of the constructive policies that have made the *Dairymen's League News* one of the foremost dairy publications in the nation," Mr. Rathbun said.

Mr. Carter, whose home is Darien, Conn., is widely known in the five states of the New York milkshed, over which he has traveled extensively attending hearings, meetings, and other gatherings of farm people. He became editor of the *Dairymen's League News* in 1922, after editorial experience that included reportorial work with the *New York Sun* and the *Binghamton Press.*

Ivan J. Watson, business manager of the *Dairymen's League News,* will continue in that capacity.

●

ITALIAN DAIRY PUBLICATION

A new Italian monthly dairy publication entitled "Il mondo de latt" was published in the month of July. This bulletin is the official organ of the Associazione Italiana Lattiero Casearia (Italy's Dairy Association). The first issue contains information on regulations affecting the Italian dairy trade and reports on the latest technical developments in that country's dairy industry. English and French summaries precede each article for the benefit of the foreign readers.

Annual subscriptions, costing $5.00, are accepted in the United States through the office of Locatelli, Inc., 24 Varick St., New York 13, N. Y.

●

Best Drink of All

Governor Duff of the Keystone State and Pennsylvania's Dairy Queen Charlotte Stine caress the product that occupied the limelight at the 1st Pennsylvania Dairy Day, August 26, 1947. Governor Duff was one of 20,000 producers, employees, and consumers who attended the festivities at Hershey, Pennsylvania. The affair was sponsored by 400 Pennsylvania Dairies.

NEW QUARTERS FOR SOLVAY

Solvay Sales Corporation, New York, has announced that the New Orleans and Houston branch offices have moved into new quarters in their respective cities. The New Orleans branch is now located at 1107 Pere Marquette Building, Baronne Street, New Orleans 12, Louisiana, and the Houston office of the firm is now established at 1313 City National Bank Building, 921 Main Street, Houston 2, Texas.

The telephone numbers of both branch offices remain unchanged.

●

DAIRY MARKETING CONSULTANT

Edmond S. Harris, for the last ten years associated with the United States Department of Agriculture, has opened his own office as a consulting economist in dairy marketing. His office will be located at 1121 Warner Building, Washington 4, D. C.

●

PATTON JOINS DECKER

Wayne B. Patton has joined the sales staff of The James M. Decker Company, well known Baltimore firm. Patton formerly associated with the Creamery Package Manufacturing Company, is a veteran of the recent war who saw service in the Pacific. As a representative of The James M. Decker Company, Patton will call on the dairy and ice cream industry throughout Maryland, District of Columbia, and Northern Virginia.

The Decker concern manufactures DECCO brand baking, ice cream, and dairy equipment.

●

THE DOCTOR AND THE DAIRY

(Continued from page 23)

scientific design has been installed. These include pasteurizers, coolers, stainless steel vats, homogenizers, bottling and capping machines and refrigeration equipment. The Certified Milk processing room has been remodeled and refitted, and the Grade A milk processing room has had many improvements. In addition to these two processing rooms, the plant includes three milk barns, a butter making room, bottle and can washing room, boiler rooms, refrigerating and ice cream plant, garage and a woodwork and maintenance shop.

Things are prosperous at White Belt today. The White Belt cows graze on some of the most expensive pasture land in the world. White Belt's real estate holdings northwest of Miami are very near the city limits and aggregate 1,600 acres. What was once Lemon City surrounded by jungles has long since become part of Greater Miami. Land near the White Belt farm has sold for as high as $4,000 an acre. But in the face of this success, Dr. DuPuis, at the age of 72, keeps right on practicing every day.

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METAL SPONGES
Designed especially for cleaning all types of dairy equipment and utensils. Will not rust or splinter, cut the hands or injure metal or plated surfaces. Kurly Kate Metal Sponges are fast working, easy to use, and easy to keep clean. Made in STAINLESS STEEL, NICKEL, SILVER and BRONZE.
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stainless metal sponge
FOR EASIER INDUSTRIAL CLEANING
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SANITARY

(Continued from page 32)

400 p.p.m. One second and ten-second contact times were used. These are the times that the teat cups actually remained in the solution. The average number of bacteria removed from the inner surface of the rubber inflation tubes on swabs was approximately 12,000. There was no significant reduction in count for the ten-second period over the one-second period. To increase the time of contact to one minute would mean an increase in the milking time of an hour for a herd of 60 cows. This would in turn cut into the efficiency of the barn routine. The solution to the problem of sanitizing teat cup between each cow milked is not apparent.

Summary and Conclusions

Since some of the results reported are only preliminary and since the study is being continued, the conclusions are only tentative.

1. A method is described for evaluating the germicidal properties of quaternary ammonium compounds. This method appears to give a truer picture of the germicidal properties under actual working conditions than is given by the phenol coefficient values as determined by the Food and Drug Administration method.

2. While the method here described is basically not new, it involves the use of newer procedures such as the use of a hand homogenizer and the spectrophotometer.

3. Organisms like *E. coli, S. aureus,* thermophilic type, and vegetative cells of *B. cereus* are readily killed by quaternaries.

4. Quatenaries appear to have no greater effect on spores of *B. cereus* and thermoduric types than old types of germicides.

5. Quaternaries are highly bacteriostatic to sporeformers.

6. On a dry basis approximately 0.3 per cent of either cow manure or nonfat milk solids will produce the first significant decrease in germicidal potency of a 200 p.p.m. quaternary solution.

7. When 200 p.p.m. of quaternary solution is used as an udder wash under normal conditions approximately 30 to 40 cows can be washed before the germicidal potency of the solution is decreased to a point where a fresh solution is needed. No chapping or cracking of udders, teats or milkers' hands were noted when this concentration of quaternary was used for a period of 4 weeks during the winter.

8. Dual purpose powders as cleaner-sanitizer combinations have considerable merit.

9. A quaternary spray treatment for milk cans showed a significant reduction in counts.

10. Metal parts of dairy equipment that have been properly washed can be effectively sanitized by the use of a solution of 200 p.p.m. of quaternary.

11. A 400 p.p.m. quaternary solution is not effective in sanitizing the rubber inflation tubes of teat cups between each cow milked when the cups are dipped rapidly in and out of the solution, which is a common practice.

REFERENCES

(1) Baker, L., Harrison, R. W., and Miller, B. F. "Inhibition by Phospholipids of the Action of Synthetic Detergents on Baceria." **Jour. Expt. Med., 74:621-637. 1941.**

(2) DuBois, A. S. "Quaternary Ammonium Germicides." **Soap and Sanitary Chemicals, 98, August, 1944.**

(3) Lawrence, C. A. "Inactivation of the Germicidal Action of Quaternary Ammonion Compounds." (Unpublished). 1946.

(4) Mann, E. H., and Ruchhoft, C. C. "A Performance Test for Rating Dishwashing Detergents." **Public Health Reports, 61: No. 24, 877-887. June 14, 1946.**

(5) "Standard Methods for the Examination of Dairy Products." 8th edition. American Public Health Association, New York, 1941.

(6) Valko, E. I., and DuBois, A. S. "The Antibacterial Action of Surface-Active Cations." **Jour. Bact., 47:15-25. 1944.**

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"KING ZEERO" ICE BUILDER

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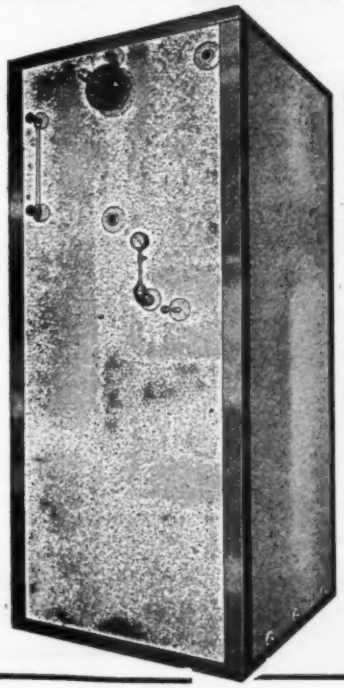

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HOLSTEIN-FRIESIANS

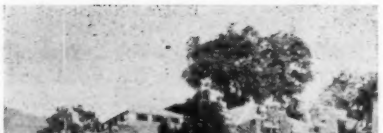
(Continued from page 14)

and white breed which, on the lush pastures of the region, developed size and producing ability that gained them increasing fame and recognition as civilization advanced.

Although Dutch settlers in New Amsterdam brought cattle with them to the new world the true foundation of the present Holstein-Friesian cattle in this country start with the activity of a New England Yankee. It was in 1861 that Winthrop W. Cherney of Belmont, Massachusetts, imported a bull and five cows after two previous attempts to establish the breed that Holsteins gained their first real foothold on the North American continent. The fact that in the short space of seventy-six years, within the lifetime of people now living the breed grew from Cherney's handful to nearly half of the producing dairy cows in the United States is in itself a tribute to the quality of the animals.

Ten years after Cherney brought his half dozen cattle to New England, The Association of Breeders of Thoroughbred Holstein Cattle was formed. But as in every enterprise where mankind is involved there was a difference of opinion. Some there were who declared that "holstein" was not an accurate description of the black and white beasts. This group determined to have their own game of marbles and set up, in 1877, the Dutch Friesian Association of America. By 1885 the absurdity of two organizations dedicated to the identical proposition held apart by a name became sufficiently apparent to enable a compromise to be worked out which resulted in the establishment of The Holstein-Friesian Association of America.

Notable records have been established by the breed during the eight generations that have lived in this country. Present record of milk produced in one lactation—365 days—is held by a Holstein, Carnation Ormsby Madcap Fayne. The record, completed in May, 1942, was a stupendous 41,943.4 pounds of milk, more than a hundred weight per day every single day in the year. On the books at Brattleboro are the records of 202 other cows that have passed the 30,000 pound mark in a 365 day test.



Home of Holstein-Friesian Association of America at Brattleboro, Vermont.

Butterfat, that yardstick of milk quality, also finds the Holsteins in the van. Although pound for pound Holstein milk does not test as high as milk from other breeds the tremendous quantities of milk that the animals produce places them out in front on total butterfat produced. La Vertex Quantity, a University of Nebraska cow, holds the lifetime butterfat production record over all other breeds with a remarkable 8,509.8 pounds of fat. Official champion butterfat cow of the United States is Carnation Ormsby Butter King with a record compiled in 365 days of 1,402 pounds.

The ability of the breed to turn roughage into milk has made Holsteins extremely popular among the nation's dairy farmers. While it is a degree more dangerous than tickling the hind leg of a kicking mule to describe one breed as better than the other where cattle fanciers are concernd, statistical studies show that in the northern and western States Holsteins comprise between 46 and 54 per cent of the dairy animals. And according to the Holstein-Friesian Association figures, 70

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Made of Stainless Steel

Built for Speed, Efficiency, Long Life!

This remarkable strainer works fast. *It's efficient, too.* Not a drop of milk can flow through without passing over the filter disc. AND, it should last indefinitely.

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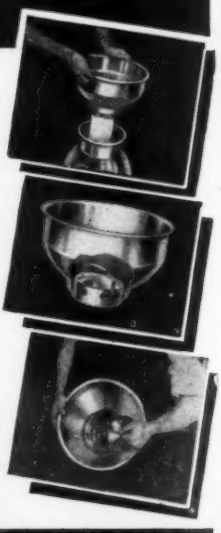

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lowlands of the Rhine delta. The intermingling of their cattle, one a black race and the other white, evolved, finally, a black per cent of the milk sold in "big cities" comes from the black and white cows.

When confronted with the comparatively low butterfat content of Holstein milk the breeder of the black and white animals is likely to exhibit a determined set in the area of his jaw and proceed to reel off nutritional testimony that is only a little less startling than his conviction. Pointing out that the food experts of the United States Army officially specified 3.5 per cent milk for their branch of the armed forces, the Holstein breeders declare that this concentration of fat results in the most palatable of milks.

While preference for one breed over another by individual cattlemen does not necessarily indicate the superiority of the favored breed any more than individual choice in cigarettes or motor cars is a true test of excellence, there are many famous names listed in the owners column of the Brattleboro record book. Owen D. Young, Thomas E. Dewey, Fred Maytag II, H. F. DuPont and Fred Pabst are all Holstein breeders of note. Behind these names are the names of other breeders, names that belong to the friendly earthy places of the nation. And behind these names are the cows, Holsteins, Jerseys, Guernseys, Ayrshire, Brown Swiss, turning the world of grass into food for human consumption. Somehow there is a grandeur about the endless pageant of cattle and grass and sunshine. One has the feeling that here is something basic, something that will last a long time, something which the uncertain tides of a troubled world will alter little.

●

Buys Enoz Chemical Company

The Diversey Corporation, well known in the Dairy Industry for the distribution of sanitation chemicals, has acquired the business and assets of the Enoz Chemical Company, Chicago, H. W. Kochs, Chairman of The Diversey Corporation recently announced. The move is in line with the greater expansion of the Diversey Corporation into the insecticide field. Mr. Koch intimated that detailed expansion plans would be further announced at an early date. Meanwhile, present personnel and operations will continue in both organizations.

●

Bay State Dairy Courses

Five Short Courses Offered at University of Massachusetts

Winter Session—Limited to Twenty Students Each

Five courses in bacteriology, milk, and ice cream are offered for the winter session at the University of Massachusetts according to a recent announcement from the University Short Course Office.

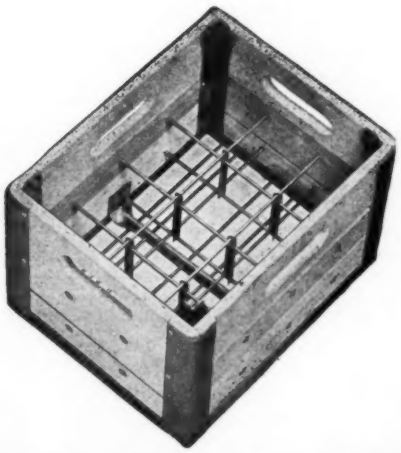
The courses, all five days in length, include Dairy Bacteriology, February 2-7, Milk and Cream Testing, March 1-6, Milk Plant Operation, March 8-13, Ice Cream Course for Beginners, March 15-20, Ice Cream Course for Experienced Men, March 22-27.

There are no entrance requirements except that students must be at least eighteen years of age or over and must have a common school education.

Unless six students register in each course, the right to cancel the course is reserved. Applications should be sent in at least three days prior to the beginning of the course as students will be accepted in the order of their application. A maximum of twenty will be adhered to for the four dairy courses and ten for the Dairy Bacteriology course.

There is a tuition fee of two dollars and a registration fee of two dollars for these courses which must be paid to the Treasurer of the College at the time of registration.

Baker is Back!



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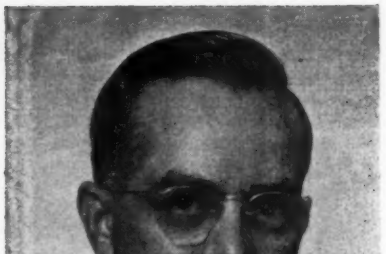

Dr. Robert F. Holland

PROBLEMS of the INDUSTRY

Dr. James C. White

Dr. Robert F. Holland and Dr. James C. White, both of the Department of Dairy Industry at Cornell University, open their new question and answer column in this month's issue of the "Review". Both Dr. White and Dr. Holland are eminently qualified by training and experience to unravel the problems of "Review" readers. Questions should be addressed to either Dr. White or Dr. Holland, Department of Dairy Industry, Stocking Hall, Cornell University, Ithaca, New York.

Flavor and Cream Line

QUESTION—"I would be very grateful if you would be kind enough to explain the problem of cream line and flavor. How can I handle my bottled milk so that I get the least amount of complaints for these two reasons?

"Sincerely yours, R.F.W., Ohio."

ANSWER—You probably know that the flavor most concerned in any relationship between cream line and flavor is the cooked flavor in bottled milk but that your handling methods will influence other flavors as well.

In general, it requires substantial increases in time or temperature above the minimum of pasteurization to produce either reduction in cream volume or the cooked flavor. You should expect no cooked flavor with a 30-minute holding time until you reach at least 155 deg. F.

The temperature of 146 deg. F. will usually cause some permanent damage to cream line if it is held for the full period of time, but again this can be readily controlled by a careful operator using good equipment.

With other flavors it is generally known that milk must be of good flavor when received at the pasteurizing plant. If feed, barn, rancid, or other flavors are giving trouble, it is well to taste milk from individual farms at the receiving deck. This should be done at regular intervals, at least once a month, because the ordinary smelling test sometimes does not detect salty or bitter milk.

Milk should not be in contact with copper or copper-bearing alloys any more than is absolutely necessary either before or after entering your plant. These metals are a crucial factor in the production of papery or oxidized flavor. If this flavor is giving you trouble, it is well to investigate your equipment for exposed brass, bronze, so-called white-metal, and copper from which the tin has been removed. Such materials, whether in vats, valves, pumps, or pipe lines, are more effective in producing oxidized flavor when the milk is hot; therefore, it is good practice to cool milk in the vat after pasteurization to a temperature of 120 deg. F., and preferably to 110 deg. F.

When milk is pumped over a surface cooler, the temperature should not be dropped below 110 deg. F. if the cream line is to be preserved. If your equipment is so arranged that milk can flow to and over the surface cooler by gravity, there is no reason why milk cannot be vat cooled to 85 deg. F. to 90 deg. F., but milk below this temperature must not be pumped or agitated unduly if the cream line is to be preserved. In general, a pasteurizer should be operated according to the manufacturer's directions, especially with reference to heating medium and speed of agitation.

With some milks, the action of the bottle filler alone is sufficient to cause

DISA

advances, bulwarks and serves the milk and milk products industries every day in the year. Three hundred and twenty-five companies comprise it. Put your problem before DISA houses . . . They will help you.

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COFFEE the Milky Way

Café Olay

Reg. U. S. Pat. Off.

AMERICAN FOOD LABORATORIES, INC.
860 ATLANTIC AVENUE, BROOKLYN 17, N. Y.

some destruction of cream line. Pasteurized milk should not be held at any stage long enough for the cream to rise before it is bottled. As long as the above temperatures of processing are used, there is little danger of injuring the cream line if cold pasteurized milk is not agitated.

Milkstone

QUESTION — "My Department of Health inspector suggested that I write you in regard to milkstone. I wonder if you could give me any information on the matter. Milkstone has always been a puzzle to me. I would appreciate any circular or other printed matter on the subject.

"Sincerely yours, R.T., New York."

ANSWER—Some days ago you wrote me relative to any literature we may have on milkstone. We do not have any material published on this subject but perhaps the following may be of some value to you.

There are two types of milkstone commonly found in plants. First, there is the milkstone which accumulates as a result of heating the milk, such as is found in preheaters, continuous pasteurizers, and in batch pasteurizers that are used more than once or twice without being thoroughly cleaned between batches. This type of milkstone can be removed only by scouring, by using a milkstone remover, or in the case of batch pasteurizers by using a good washing powder containing an adequate amount of wetting agent.

The milkstone which accumulates in ordinary milk handling equipment in which milk is not heated is usually caused by a combination of washing powders and milk solids. If all the milk is thoroughly removed from the equipment, using either luke warm or cold water—warm preferred—and a brush, milkstone will not accumulate. In other words, every particle of milk should be removed before washing powder is used. Again this type of milkstone can be reduced to a minimum practically regardless of the method of washing, provided hot water is not used as the original rinse, if a washing powder containing sufficient wetting agent is used. The washing powders incorporating 5 per cent or more of wetting agent are more expensive than some of the ordinary powders, but, if the plant personnel and facilities for washing are not 100 per cent, it is probably cheaper in the long run to save some labor by using the more expensive powders. Even a pasteurizer which is used for more than one or two batches during the day can be kept free from milkstone if all the deposit is removed daily during the prerinse with warm water and the application of a brush or a bronze sponge. No metal sponge of any kind should be used on tinned equipment.

Most of the companies producing dairy washing compounds manufacture and sell milkstone removers. These are generally dilute solutions of weak acids, such as tartaric acid, gluconic acid, and phosphoric acid. Others can be used but their strength should be so limited as to keep corrosive effects at a minimum. A wetting agent of a suitable type is often incorporated in these milkstone removers.

When cleaning pre-heaters and high-temperature, short-time pasteurizers the best procedure is to circulate milkstone remover through the unit for some time and then follow this treatment with a good washing-powder soak before dismantling and cleaning with a brush. Only a small amount of solution is required to fill the system completely, and by circulating the solutions a strong rinsing as well as soaking effect is produced. A separate centrifugal pump should be kept for this purpose since the timing pump of the high-temperature, short-time pasteurizer may be injured by this treatment.

Hileman and Leber recommend the following procedure for cleaning these units: "(1) Disconnect the milk pump

(Please turn to page 68)

L-W
GET THE ONE YOU KNOW IS ACCURATE!
MECHANICAL MILK SEDIMENT TESTER
Industry leaders purchase the L-W Mechanical Sediment Tester because it's sturdy, accurate, and reasonably priced—the same reasons you will prefer it! The L-W Mechanical Tester shown here is fully automatic, and features a unique cut-off valve that assures 16 ounces every time. L-W is the best long-range investment for your plant, too!
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Typical Dairy Product Manufacturers Using the L-W Mechanical Tester:
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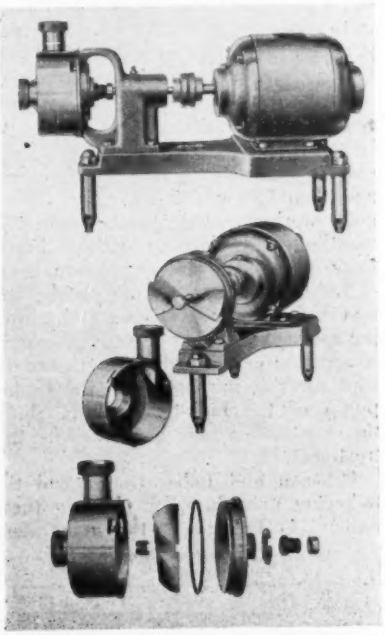
★ L-W GENUINE "B" AND "C" TYPE HAND TESTERS ARE ALSO IMMEDIATELY AVAILABLE
WRITE FOR NAME OF JOBBER NEAR YOU OR FOR ANY OTHER INFORMATION
L-W DAIRY SUPPLY DIVISION OF THE LANGSENKAMP-WHEELER BRASS WORKS, INC.
1151 W. 79th STREET — CHICAGO, ILLINOIS

USING OUR SEPARATOR • ITEMS OF INTEREST SKIMMED FROM HERE AND THERE

New Tri-Clover Pump

TRI-CLOVER MACHINE CO., Kenosha, Wisconsin, announces the new "Champion" Series Sanitary Pumps, for dairy, food processing, beverage and



confectionery industry use – and wherever corrosion-resistant pumps are required.

This new design is said to incorporate numerous exclusive features, including completely demountable head and working parts for rapid, thorough cleaning; patented carbon-faced neoprene seals; aluminum alloy base and bracket; stainless steel legs (front leg adjustable; all contact parts of polished 18-8 stainless steel with improved impeller and case design to provide non-agitating action on liquids or semi-solids.

Two models are offered: The Model Ms, ranging from 0 G.P.M. at 15.5 ft. head, to 66 G.P.M. at 9 ft. head; and The Model S, having a range of 0 G.P.M. at 25 ft. head, to 95 G.P.M. at 0 ft. head.

The accompanying photograph shows assembled and disassembled views of the new Tri-Clover Champion pump. "Exploded" view shows, left to right: pump case, lock nut, impeller, neoprene gasket, demountable head, lock ring, neoprene seal, and seal adjustment collar.

Further details may be had by addressing the manufacturer.

Conveyor Chains

THE WADE-MORRISON Company, a newly formed corporation with executive and sales offices at Columbus and Alliance, Ohio, has begun manufacture of conveyor chains. Deliveries are being made in twelve weeks.

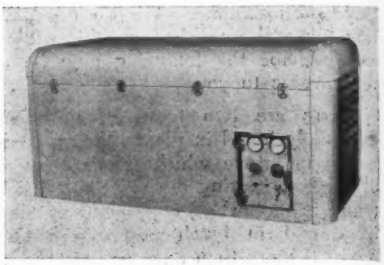
Soapless Cleaning Composition

A NEW, SCIENTIFIC cleaning material, Oakite Composition No. 83, suitable for use in dairies for manual cleaning operations where effectiveness in cleaning and mildness on the skin of the operator are desirable characteristics, has just been announced by Oakite Products, Inc., New York.

It is a soapless material and does not clean on the same principle as soap. It contains a special emulsifying surface-active ingredient which considerably steps up its detergent properties.

Truck Refrigerating Unit

THE TRANSPORT COOLER CO., Farmington, Michigan, announces production of a new model refrigerating unit for trucks and trailers where low temperatures, from zero to 20 deg.



below are needed to transport ice cream and frozen foods. The cooler consists of two easily-installed package units.

This model includes an enclosed power unit 4x2x2 feet, which is light in weight and may be attached over the cab or under the body. The cooling unit, with associated valves and fittings, measuring only 2x2x2 feet is placed inside the body. To connect these two units requires only three lines of tubing: refrigerant supply, return line, and a flexible shaft which drives the cooling fan. One small hole to admit these tubes is the only opening needed in the body, thus reducing installation costs to a minimum.

Steel Insulation

WALL THICKNESS in milk storage rooms can be reduced by approximately 50% without sacrificing maximum insulating efficiency, by constructing them with Ferro-Therm steel insulation, as opposed to mass insulation of the same insulating value according to the American Flange Mfg. Co.

Made from sheet steel with a lead and tin-alloy coating, Ferro-Therm Steel Insulation is installed in layers with an air space between each layer. In a milk storage room, where a temperature of 35 degrees to 40 degrees F. is maintained, four sheets of insulation would be employed.

Possessing easy handling characteristics, the insulation weighs 0.25 lb. per

Why Milk Processors welcome

NEOCID DDT COMPOSITIONS

Milk Processors find they can now substantially reduce the flies and other insect pests that gather and breed around Dairy Plants, by spraying the inside of buildings with NEOCID* M 25, an emulsifiable DDT preparation made by the Geigy Company, *"Originators of DDT Insecticides"*. Its deadly efficiency has been demonstrated with marked success wherever used. On barn walls and other places where a white residue is not objectionable, use NEOCID BA 50, a wettable DDT powder that also gives amazing results.

If NEOCID DDT Insecticides are not available locally, simply send us the name and address of your dealer.

Geigy

GEIGY COMPANY, INC.
89 BARCLAY STREET, NEW YORK 8, N.Y.

*Reg. U.S. Pat. Off.

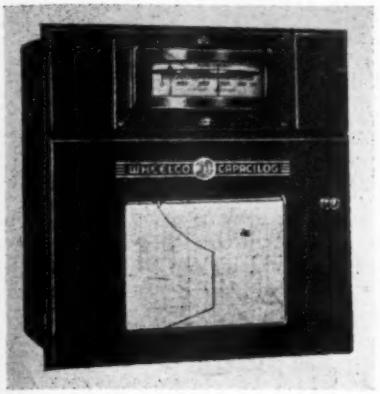
ORIGINATORS OF DDT INSECTICIDES

square foot. Ten thousand square feed of Ferro-Therm can be stored in the space the size of a man's desk. Insulation queries may be referred to American Flange & Manufacturing Co., Inc., 30 Rockefeller Plaza, New York City.

Wheelco Capacilog

WHEELCO INSTRUMENTS COMPANY, Chicago, Ill., announced the release of a new type strip chart recorder, the Capacilog, during the Exhibit of the Instrument Society of America.

The instrument, advertised as an "Electronic Scriber", operates on a Wheelco "Electronic Principle", which



has been successfully applied to the company's Capacitrol pyrometer controller for many years. It is designed for the measurement indication control and permanent record of variables in the process industries.

Operating on 115 or 230 Volts, 25, 50 or 60 Cycles, the Capacilog is available in a wide number of models utilizing a variety of control systems. Maximum power consumption: 60 Watts.

Ammonia Leak Suit

ARMSTRONG SUPPLY COMPANY, 2200 East Huntingdon St., Philadelphia, Pa., announces a special Ammonia Leak Suit and Mask.

The suit is designed to protect the wearer from extremes of heat and cold as well as protection from direct spray of ammonia, chlorine, etc., and completely prevents exposure of any part of the body from head to foot.

The mask is a completely self-contained breathing apparatus with the capacity to insure breathing comfort in all atmospheres, temperatures and concentrations.

Milk Truck Bodies

NEWLY DESIGNED Quaker Model Milk Truck Bodies are now in full production. S. A. Berger, General Manager of Atlas Body & Equipment Co., 628 N. 34th St., Philadelphia 4, Pa., said "that this new body is designed for increased payload capacity and streamlined for eye appeal."

This is an all steel body. Roof insulated with fibre glass, inside lined with galvanized sheets. Outside steel panels are riveted for easy replacement. Floor and driver's compartment covered with safety tread steel plate. Roof all steel. Windshield section made in one section, fourteen gauge steel. Front doors folding type.

This body made in two standard sizes for milk cases of round bottles 4x4 and 4x5. Other sizes built to specifications of customer. All bodies custom built to order.

The management said, "although materials are still very scarce we are delivering in limited quantities and invite inquiries from new customers."

Aluminum Gravity Conveyor

A NEW LIGHT-WEIGHT aluminum gravity wheel-type conveyor especially designed to increase the portability and versatility of Rapid-Wheel conveyor installations and to provide an easy-to-handle type of conveyor for general use is announced by The Rapid-Standard Company, Inc., material handling equipment manufacturers of Grand Rapids, Michigan.

The Horizontal Plate Principle

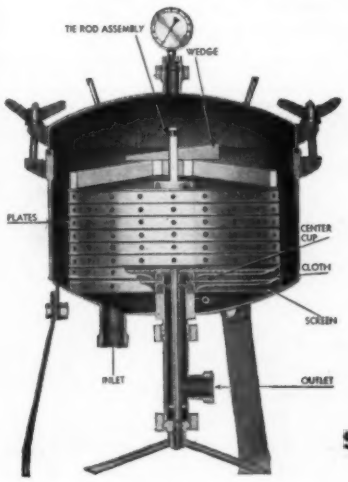
Gives You These 2 Important Things in

SPARKLER
Horizontal Plate
FILTERS

. . . for hot or cold milk

1. **Sanitation**—because Sparkler filters have all parts made of rolled, stainless steel, easily accessible for cleaning, with no internal threads, no castings, they offer the utmost in sanitary design.

2. **Production Efficiency**—because the filter medium is supported evenly on a horizontal plane by Sparkler stainless steel horizontal plates, filtration takes place uniformly over entire filtering area. *This means high flow rates.* The smallest particles, light or heavy, are removed. There is ample run-off space for filtered milk, yet the compact construction uses exceptionally small space.



"Sparkler Filters Give you Clean Milk Faster" . . . .

Construction and Design Features

1. Larger filtering area for continuous operation.
2. Positive "Sparkler" Wedge Seal—no by-passing.
3. Inexpensive, disposable filter medium — prevents blanketing.
4. All parts removable for easy cleaning.

Write for details

SPARKLER MANUFACTURING CO.
Mundelein, Illinois

Air Sanitation

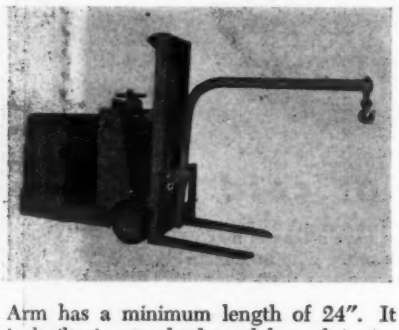
AIR SANITATION of a high degree is claimed for a new device called VIRAGON. Primarily designed to remove unwholesome odors resulting from spilling and souring of milk, garbage, storing, processing, and the like, the instrument differs from other equipment, according to the manufacturer, in its ability to function continuously.

Each unit combines an ultra-violet ray Sylvania electronic tube, and a built-in sanitizer. The device operates on 110-120 volts 60 cycles A.C. and plugs into an ordinary light socket. Using about 25 watts, the company maintains that the unit can be operated for around a penny a day. Service life is guaranteed.

For complete information write to Viragon Manufacturing Company, 112 West 18th St., Kansas City, Mo.

Forked Truck Crane Arm

LEWIS SHEPARD PRODUCTS, INC., announces the availability of a new Crane Arm attachment to fit all models of their Power Fork Trucks. Constructed of tubular steel, this Crane



Arm has a minimum length of 24". It is built, in standard models and in increments of six inches to a maximum length of 72". Longer lengths may be obtained upon request. Easy to mount as a pair of forks, this latest Lewis-Shepard feature can be mounted between two forks and may be operated as a separate unit or in combination with the forks.

Full information regarding this Crane Arm attachment can be obtained by writing Lewis-Shepard Products Inc., 301 Walnut St., Watertown 72, Mass.

Goodrich Storm Suit

A NEW LIGHTWEIGHT storm suit made with its Ameripol, American-made rubber is announced by The B. F. Goodrich Company, Akron, Ohio. The suit affords maximum protection from wind and rain for fishermen, hunters, general outdoor use and in many industrial applications.

The two-piece suit has a hooded parka, raglan sleeves, gusseted neck with waterproof slide fastener from chest to neck and a drawstring neck closure for snug fitting. Trousers have drawstring at waist.

The suit is water, acid, alkali and caustic proof and is resistant to gasoline, grease, animal and vegetable fats, will not stiffen or crack and is extremely comfortable for this type garment.

It Sweeps Clean

SPEED SWEEP, brushes are a new brush of "radically" different design placed on the market by the Milwaukee Dustless Brush Company of Milwaukee, Wisconsin.

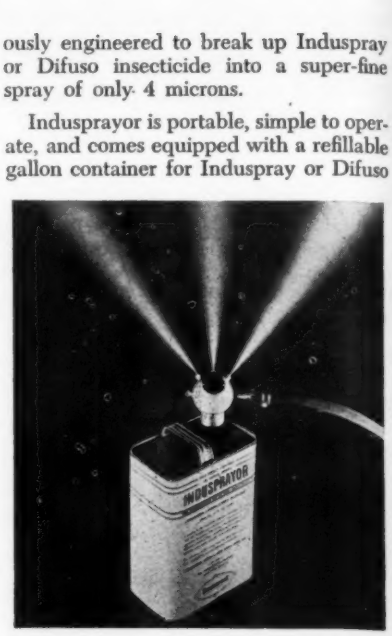
Narrow wood block, hand placed tufts, steel protection for wood block, adjustable handle, scientifically arranged tufts, of proper length are features of the new brush.

Further information and equipment may be obtained from the Milwaukee Dustless Brush Company, 530 North 22nd St., Milwaukee, Wis.

Industrial Insecticide

INDUSPRAYOR, a new industrial insecticide sprayer has no moving parts, nothing to break down, no maintenance required. Its three precision-built nozzles have been ingeniously engineered to break up Induspray or Difuso insecticide into a super-fine spray of only 4 microns.

Induspravor is portable, simple to operate, and comes equipped with a refillable gallon container for Induspray or Difuso



insecticide. Induspravor is attached to the can and connected with an air or steam outlet. If automatic spraying is desired, a buttton is pressed and locked in operating position with a clip.

Name New Sales Head

AMERICAN CAN COMPANY has announced the appointment of George C. Seybolt as manager of sales in the Boston district, succeeding G. U. Baylies who has been transferred to the company's New York office.

Mr. Seybolt began his career with American Can in 1935 in New York where he remained until 1939, when he was transferred to the Boston sales office.

From 1942 until 1945 he served in the United States Navy in Europe assigned to Naval Intelligence. Returning to the United States early in 1946, Mr. Seybolt was named assistant sales manager in the company's Baltimore district and held that position until his present appointment.

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By Advertising and Identifying Their Product With

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DEL-D-CALS REACH THE WORLD'S LARGEST CONSUMER MARKET AT THE POINT OF PURCHASE. NO OTHER MEDIA ACCOMPLISHES THIS SO EFFICIENTLY, EFFECTIVELY, ECONOMICALLY AND COLORFULLY AS OUR DECAL PRODUCTS.

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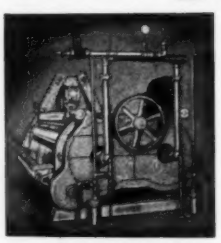
Doors - Windows - Showcases - Trucks - Backbars

Better **DRY MILK**



AT LOWER COST
DRY MILK MACHINES
Built in Five Sizes

The patented, glass-smooth, "20-year cylinders" give years and years of maximum production of a superior dry milk at the lowest possible cost.

Many other exclusive features insure long life with low steam and power costs.

Complete details upon request.

OVERTON MACHINE COMPANY
DOWAGIAC MICHIGAN

Dairy Daze

By Edgar Allen, Jr.

"O.K., GO AHEAD AND LAUGH. BUT HE'S SOLD MORE MILK CANS THAN ANY SALESMAN ON THE FORCE!"

HOLSTEIN MEN SOUTH

Brattleboro, Vt.—To promote wider acceptance of the Holstein-Friesian breed of dairy cattle in South American countries, Mr. Glenn M. Householder, Director of Extension, The Holstein-Friesian Association of America, is attending the third national Colombian Holstein-Friesian Exposition in Bogota, Colombia, S. A.

With Mr. Householder is Mr. Harvey F. Farrington, Export Adviser of the Holstein organization. Mr. Householder will judge the show, one of South America's leading livestock events.

●

KIMBLE GLASS SALES MANAGER

J. A. Serra has been named manager of a new Sales and Service Control Division of Kimble Glass, according to an announcement made recently by S. J. McGiveran, Vice-President of Owens-Illinois Glass Company and General Sales Manager of the Kimble Glass Division.

The division, whose functions will include sales reports, forecasts, and long-range production planning, will begin operations on August 18 and will report directly to the General Sales Manager.

Other members of the Sales and Service Control Division will include T. F. Logan, J. A. LeGrand and W. J. Souders, Jr., all of Vineland. Mr. Logan was formerly manager of the Sales Service Departmen tof Kimble Glass while Mr. Souders directed Sales Service for the Kimble Container Division and Mr. LeGrand was in charge of Sales Service for the Kimble Scientific Ware Division. All three of these men have had long service with Kimble Glass and bring to Toledo an intimate knowledge of the business, Mr. McGivearn pointed out.

The new department will be located in Toledo.

●

MILK COOLERS FOR SWEDEN

Dayton, Ohio—An allocation of 1,000 automatic electric milk coolers of the latest design, earmarked for shipment to Stockholm from milk producers in central Sweden, may bolster famished Europe's currently inadequate dairy product supply, an export department spokesman for Frigidaire Division of General Motors disclosed here today.

L. C. Shannon, the Company's Canadian and Export department manager, pointed out that the new coolers are equipped with the latest type "drop-in" refrigerating units. "It is apparent that Swedish dairy farmers are adopting the most modern methods and equipment to augument their milk production," declared Shannon. "These up-to-the-minute units will afford initial milk cooling at proper tempertures, lowering the bacteria count and reducing spoilage. Thus, more dairy products will be available for starving Europeans." The equipment is being installed by the A. B. Frigor Industri, a Frigidaire dealership in Stockholm.

●

OPEN HOUSE AT MIAMI

Open House will be maintained by Specialty Brass Company at their headquarters in the Croyden Arms Hotel, Collins Avenue at 38th Street, Miami, Florida, during D.I.S.A. Convention October 27th to November 1st at Miami.

FOR A DEPENDABLE SOURCE OF HIGH QUALITY DAIRY PRODUCTS, CALL US.

MILK
FRESH CREAM
FROZEN CREAM
SOUR CREAM
COTTAGE CHEESE
FARMERS CHEESE
POT CHEESE
BUTTER
BUTTERMILK
DRIED SKIM MILK SOLIDS
SWEETENED SKIM CONDENSED MILK
ICE CREAM MIX
BAKERS CHEESE
PLAIN SKIM CONDENSED MILK

GRANDVIEW DAIRY, Inc.

6071 METROPOLITAN AVENUE, RIDGEWOOD, N. Y.

PLANTS AT:

Arkport, New York — Bear Lake, Pennsylvania — Cohocton, New York — Neenah, Wisconsin

WANTS and FOR SALES

RATES: "Position Wanted," 50c. Limit of 50 words; 2c for each additional word. All other advertisements, 5c a word ($1.00 minimum). Keyed ads, 15c extra to cover return postage. The name and address should be included in counting the words. All payments strictly in advance.

FOR SALE — EQUIPMENT

FOR SALE—Two 125 G.P.H., Jr. Viscolizers. One 6-16 Cherry Burrell milk bottle filler. Also one Sturdy-Built (5 wide) bottle washer. Adair Milk Farm, R.R. 2, Urbana, Ill. 10-M

USED MILK BOTTLE CRATES—Can deface old name and rebrand. Write or phone for present day inventory. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland, Ohio. 10-M-t.f.

FOR SALE—48x30 stainless steel vacuum pan. 400 gallon oval coil pasteurizer, stainless steel lining; 300 gallon forewarmer, stainless steel lining; 500 gallon stainless steel cheese vat. Above have been replaced with larger equipment, have had very little use, and are as good as new, 3x3 York ammonia compressor; 5x5 Phoenix ammonia compressor; McKinley, 4 cans per minute, rotary can washer; two stainless steel 2 compartment weigh cans; one Specialty Brass forewarmer, 7000 lbs. capacity. Saginaw Creamery Co., Saginaw 5, Mich. 10-M

FOR SALE—One lot of round 56 mm. milk bottles, quarts, pints, and half-pints. Also one lot of wooden cases of all sizes in very good condition. Discount on large purchases. Long Meadow Dairies, Durham, N. C. 10-M

FOR SALE—Brine Tank—good condition, width 2½ ft. Length 16 ft. Height 6 ft. Replaced only as larger tank was needed. Price reasonable. Prospect Dairy Farms, 168 East Main Street, Prospect Park, N. J. Phone Lambert 3-1124. 10-M

FOR SALE—DeLaval No. 40 Separator, factory rebuilt, never used. Also surface cooler, 6 ft., with new stainless steel cover. Pilfour Dairy Farm, Inc., Neshanic, N. J. 10-M

FOR SALE—One used C.B. Deluge round milk bottle washer (2 compartment) $150.00. S. Smith, 254 North Ave., Hilton, N. Y. 10-M-2

FOR SALE—One Colony Sanitary Homogenizer equipped with Stainless Steel head. Five years old. It is a 500 gallon 2 stage vertical homogenizer complete with motor drive for 2 phase, 60 cycle 220 volts. Selling price $750.00. Lincoln Dairy Co., 69 Ward Place, Hartford, Conn. 10-M

FOR SALE — EQUIPMENT

FOR SALE—LARGEST SELECTION of Pasteurizers, Bottle Washers, Bottle Fillers, Coolers, Can Washers, Homogenizers or Viscolizers, Pumps, Surge Tanks, Storage Tanks, Heaters, Separators, Weigh Cans, Filters, Vacuum Pans, Ice Cream Freezers, etc. Write or wire your particular requirements and plan to visit our new warehouse and shop. Lester Kehoe Machinery Corporation, 1 East 42nd St., New York 17, N. Y. 10-M

FOR SALE—One Meyer Dumore 12 wide Single Compartment Washer for ½ pints, pints and quarts. $2.000.00. The Filter Paper Company, 2260 South Michigan Ave., Chicago 16, Ill. 10-M

WANTED TO SELL—10M pound Cheese Vat not used since retinned, price $150.00, f.o.b. shipping point. Also would like to buy a 2M pound Cheese Vat. Box 180, care this publication. 10-M

FOR SALE in Eastern plant, one Braun Straight-Away can washer with cover replacer—14 cans per minute. One Clayton high pressure boiler 100 h.p., 125 lbs. pressure complete with automatic water feed, oil burner and controls, complete—compact unit. Box 182, care this publication. 10-M

ONE HEIL model "E" 6 wide bottle washer; One Cherry Burrell Nuline No. 70 bottle filler; about one thousand quart, pint and half pint milk cases for round bottles and large quantity of bottles for same; one Miller butter cutter and one Cherry wrapper; one Creamery Package 60 quart continuous ice cream freezer. All of the above equipment in daily use at the present time, but will be available about December 1. Due to extensive plant changes we are offering this equipment for sale at bargain prices. Call or write Missouri Valley Creamery, Washington, Mo. 10-M-2

FOR SALE—2,000 gallon stainless steel insulated Milk Tank on late truck chassis, also 20 tanks Trailerized and on trailers—2,500 gal. to 4,250 gal. and storage tanks. Meyer Simon, 150 West 87th St., New York City, N. Y. 10-M-2

FOR SALE—Ideal and Vendall rebuilt vending machines. Pilfour Dairy Farm, Inc., Neshanic, N. J. 10-M

FOR SALE — EQUIPMENT

FOR SALE—Heil 4 wide soaker type bottle washer, Model F, Serial No. 1492, practically new, used four months. The Ellsworth Ice Cream Co., Inc., Huntingburg, Ind. 10-M

FOR SALE—1 Braun straightaway can washer with cover replacer, 14 cans per minute; 1 glass-lined pasteurizer with side agitator, 300 gallons capacity; 3 Pfaudler low vats, glass-lined with agitators, 200 gallons capacity; 2-500 gallon polished stainless steel single shell tanks; 1 Peterson Kelly hot water heater with controls, 250 gallons per minute; 1 Clayton high pressure boiler, 100 H.P., 125 lb. pressure, complete with automatic water feed, oil burner and controls — this is a conical unit requiring a space 4 ft. wide, 7 ft. high and 7 ft. long; C.P. shell and two brine cooler float and surge drums with valves, complete, 10 ton capacity — 24 tubes, 2 in. diameter, 8 ft. long, cooler is 18 in. in diameter, has 7 passes; shell and tube condensor — 15 ft. 6 in. long, contains 30 tubes, 2 in. diameter, 15 ft. long, 4 passes; 3 — 3000 gallon Pfaudler horizontal glass-lined storage tanks; two 6x6 York 2 cycle ammonia compressors with motors; 1 U.S. batch freezer, brine, 80 qt. capacity, 10 H.P. motor. 1 No. 41 DeLaval steam driven separator; 1 No. 70 DeLaval separator with motor; 1 Union viscolizer, 450 to 500 gallons per hour, complete with motor; 3 cheese vats—8500 lbs.; 200 Wilson cheese hoops; 2000 quart cases for square bottles — brand new — good buy; 2000 qt. cases for round bottles; 1 Cherry-Burrell single spray pasteurizer with motor; 1 — 20 can pasteurizer — stainless steel; 2 — 12 ft. sinks with racks. S. Edelmann, 321 Broadway, New York 7, N. Y. 10-M

FOR SALE — MISCELLANEOUS

NEW JERSEY. Newark and Pennsylvania approved milk in tanks or cans, on daily or contract basis. Major Smith. 3229 Bergenline Ave., Union City, N. J. 10-M-2

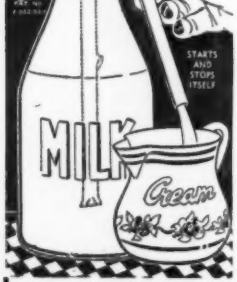
FOR SALE—Chocolate Milk made with Bradway Non-Settling Chocolate Syrup and Powder is superior. Place your trial order now. BRADWAY CHOCOLATE COMPANY, New Castle, Ind. ..... 10-M-t.f.

FOR SALE—25M Sealright paper pint bottles. Pilfour Dairy Farm, Inc., Neshanic, N. J. 10-M

BUSINESS OPPORTUNITIES

FOR SALE—Dairy in town of 15,000. Only pasteurizing plant in town. Equipment for 150 gallons. Business can be increased. Green's Dairy, Blytheville, Ark. 10-M

FOR SALE—Small Dairy in Southern Lake County, Ind. With all equipment, trucks and living quarters. Box 184, care this publication. 10-M



NEW — USEFUL — INTERESTING

Magic Cream Siphons, for home use, remove cream from bottled milk, for use with coffee, cereals and desserts.

Leading dairy firms find Magic Cream Siphons a welcome sale booster aid. Thrifty housewives appreciate them and every home using our cream siphon will consume more milk—the best balanced and least expensive of natural foods.

Free sample for round or square bottles —two models are made.

$12.50 per gross $83.00 per 1,000

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BUSINESS OPPORTUNITIES

FOR SALE—Michigan ice cream and milk plant. Yearly ice cream sales over 200,000 gallons. Milk receipts 22 million pounds. Manufacturing powdered and condensed milk. Latest stainless steel equipment throughtout. New over-capacity automatic power plant. Box 178, care this publication. 10-M

FOR SALE—Only milk plant in fast growing industrial town of 9000 population doing well over $100,000 per year. Ice cream and dairy store in front. Plenty of production for expansion. Good lease on building. Will require $20 000 to handle — full price $30,000. Box 183, care this publication. 10-M

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DAIRY PLANT OWNERS SEEKING
Progressive Steam Fitting Concern
Plants Modernized
Steam and Condensation Surveys for Fuel Conservation
Boilers and Machinery Installed
Heating and Insulation
Eastern Territory Covered
S. PINN & SON
1271 Hoe Ave. New York 59, N. Y.
10-M-t.f.

WANTED—Milk solicitors George Basil or James Owens contact Nangles Dairy, Donora, Pa. 10-M

WE ARE INTERESTED in purchasing a quantity of Quart, Pint and Half-Pint Cases. Send full particulars stating quantity, condition and price. Box 177, care this publication. 10-M-t.f.

EASTERN MARKET output small cheese factory, or rent small milk plant for making Muenster cheese. Box 185, care this publication. 10-M

WANTED—A good used Viscolizer or homogenizer. Give size, make, price and condition in first letter. Box 179, care this publication. 10-M

WANTED—SKIM MILK, year round; New York State plant or nearby. Plant must have facilities for cheese making. Box 181, care this publication. 10-M-t.f.

LABORATORY SERVICE

CHEMICAL and Bacteriological Analyses of milk and its Products. Personal attention to Official Samples and Sanitary Requirements. N. Y. State Licenses. DAIRY PRODUCTS LABORATORY, 82-31 60th Rd., Elmhurst, L. I., N. Y. 10-M

NDC AND THE MARCH OF TIME

"Your Doctors — 1947" the current March of Time film devotes a sizable amount of footage to the National Dairy Council's nutrition education program. Shown above are a dozen frames of the picture that illustrate phases of the Council's work. It is estimated that more than 30,000,000 people will see the film in theaters distributed throughout the world.

NEW SALES MANAGER

To correlate the sales activities of the Columbia Chemical Division of Pittsburgh Plate Glass Company and the Southern Alkali Corporation, W. I. Galliher has been appointed executive sales manager of both units, according to E. T. Asplundh, vice president in charge of the Columbia Chemical Division. Southern Alkali is a subsidiary of the Pittsburgh firm.

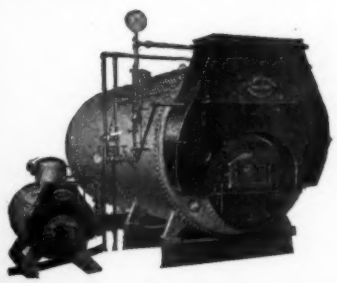
Associated with Columbia Chemical since 1931, Mr. Galliher, for twelve years was director of sales for the division's heavy industrial chemical products. He has served as Columbia's executive sales manager since January, 1943.

Mr. Galliher will maintain his headquarters at Fifth Avenue and Bellefield Street, Pittsburgh, Pa.

P. J. CRANDALL ELECTED

Perry J. Crandall, treasurer of Rieck-McJunkin Dairy Company, has been elected vice president of the Pittsburgh Control of the Controllers Institute of America. Edward J. Whalen, controller of Smith-Lee Company, Incorporated, Oneida, N. Y., was similarly honored by the Syracuse Control.

LEFFEL SCOTCH MARINE BOILER



Universally accepted and used as the Ideal Boiler for MILK PLANTS where Economical Service, High Efficiencies and Lowest Maintenance Costs are required.

Built in sizes 6 to 250 H.P., to comply with the A.S.M.E. Boiler Code and all State Boiler Laws.

Splendidly adapted for firing with COAL (hand fire, or with the specially designed LEFFEL STOKER) OIL, GAS and WOOD.

THE JAMES LEFFEL & CO., Established 1862 Springfield, Ohio

See Additional Leffel Stoker Ad on Page 46 Dept. MR

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PICKLE SUNDAE—YES?

Chicago—Dairy and pickle interests have quashed for once and for all the old food fallacy that pickles and dairy products don't mix.

"Any food that is good by itself can safely be eaten with any other food, or any combination of good foods," declared the Department of Nutrition Service of the National Dairy Council. "The idea that eating a pickle with milk, or with any other dairy product, would form mysterious poisons in the body is a product of lurid imagination unhampered by fact."

The National Pickle Packers Association pointed with pride to the fact that in addition to containing valuable vitamins and minerals, pickles are rich in acetic and lactic acid, two of nature's wonder-workers in aiding digestion.

"Lactic acid has great therapeutic value and actually is used often to improve the digestibility of milk for infants and invalids," the pickle packers declared.

How'd you like a pickle sundae?

●

FORMS ASSOCIATION

Indianapolis, Ind. (E. B.)—Ballard Ice Cream Company here, which was established in 1875 by the late William H. Ballard, has joined the Midwest Quality Chekd Ice Cream Association. The local firm has its own formula for ice cream and has the Eskimo Pie franchise for 50 counties of central Indiana to supply other companies with this product. The company also operates a retail and wholesale milk business.

PROBLEMS OF THE INDUSTRY

(Continued from page 60)

and connect a special pump for circulating the cleaning solutions. (2) Pump cold water through the system until the discharging water is free from all milkiness. (3) Pump a 0.1 per cent solution of phosphoric acid into the system and recirculate this solution at 160 deg. F. for 30 to 60 minutes. (4) Rinse out the acid by means of water. (5) Using a mild alkaline cleaner (soda ash, tri-sodium phosphate or sodium silicate) at the rate of 1 or 2 pounds per 90 gallons of water, fill the system with the alkaline solution and recirculate it at 160 deg. F. for 30 to 60 minutes. (6) Rinse out the alkaline solution with water. (7) Dismantle the equipment and go over all surfaces with a brush dipped in a dilute alkaline cleaning solution. Usually very little material remains for removal by brushing, but the brushing operation should be employed and performed in such a manner as to afford a thorough inspection of all surfaces. (8) Rinse with hot water, and leave it for drainage and drying."

OF EVENTS TO COME

Packaging Machinery Manufacturers Institute—Fifteenth annual meeting on October 6 and 7, 1947, at the Hotel Sheraton, Springfield, Massachusetts. George A. Mohlman, President, Package Machinery Company, East Longmeadow, Massachusetts, is Chairman of the Committee on Arrangements.

American Public Health Association—75th annual meeting, Atlantic City, October 6 to 10 inclusive.

Minnesota Creamery Operators' & Managers' Association—Annual convention, Hotel Lowry, St. Paul, October 7-8.

Iowa Creamery Butter Manufacturers Association—Annual convention, Hotel Montrose, Cedar Rapids, Iowa.

Wisconsin Creameries Association — Annual Convention, October 15, Northern Hotel, Chippewa Falls, Wis.

International Association of Milk Sanitarians—Annual meeting Schroeder Hotel, Milwaukee, October 16, 17, and 18. Dr. J. H. Shrader, 23 East Elm Ave., Wollaston 70, Mass., secretary-treasurer.

Wisconsin Milk Sanitarians Association—Annual meeting with International convention at the Schroeder Hotel, Milwaukee, Wis., October 16 to 18, inclusive. K. G. Weekel, president, Department of Dairying, University of Wisconsin, Madison.

Missouri Butter and Cheese Institute—Annual Convention will be held October 17-18, 1947, at the Missouri Hotel in Jefferson City, Missouri.

Red River Valley Dairymen's Association—Annual butter contest and convention, Thief River Falls, Minn., October 21, 22.

Wisconsin Creamery Employees Association—Tentative arrangements have been made for the annual convention at Marshfield, Wis., October 21, and 22, and 23. James Ashley, Chippewa Falls, secretary.

Dairy Plant Operators and Milk Distributors Conference—26th Annual Meeting Dept. of Animal and Dairy Husbandry, University of Vermont, Burlington, Vt., October 29-30.

Vermont Conference for Dairy Plant Operators and Milk Distributors—Twenty-sixth Annual Conference, October 29 and 30, University of Vermont, Burlington, Vt. O. M. Camburn, Director of Short Courses and Educational Conferences.

Dairy Industries Society, International—First annual meeting will be held in Miami, Fla., October 27 to November 1. For further information, address the society at 1426 G St., N. W., Washington 5, D. C., U. S. A.

International Association of Ice Cream Manufacturers—Annual convention, Miami Beach, Fla., October 27, 28, and 29.

Milk Industry Foundation—Annual convention, Miami Beach, Fla., October 30, 31, and November 1.

Dairy Industries Supply Association—"Stand-by" headquarters during Milk and Ice Cream convention week, Miami Beach, Fla., October 27 through November 1.

Michigan Dairy Manufacturers' Conference—Michigan State College, East Lansing, November 5-7.

National Cooperative Milk Producers Federation—Annual convention, Jefferson Hotel, St. Louis, Mo., November 5-8.

Ohio Animal Nutrition Conference—Ohio State University, Columbus, Ohio, November 6 and 7.

Iowa Milk & Ice Cream Association—Annual convention, Des Moines, Iowa, November 12-14.

National Creamery Buttermakers' Association—Annual convention, Hotel Lowry, St. Paul, Minn., November 12-13.

New York State Milk Distributors—Annual convention, Arlington Hotel, Binghamton, November 12-13.

Indiana Dairy Products Association — Annual convention, French Lick Springs Hotel, French Lick, Indiana, November 17-19.

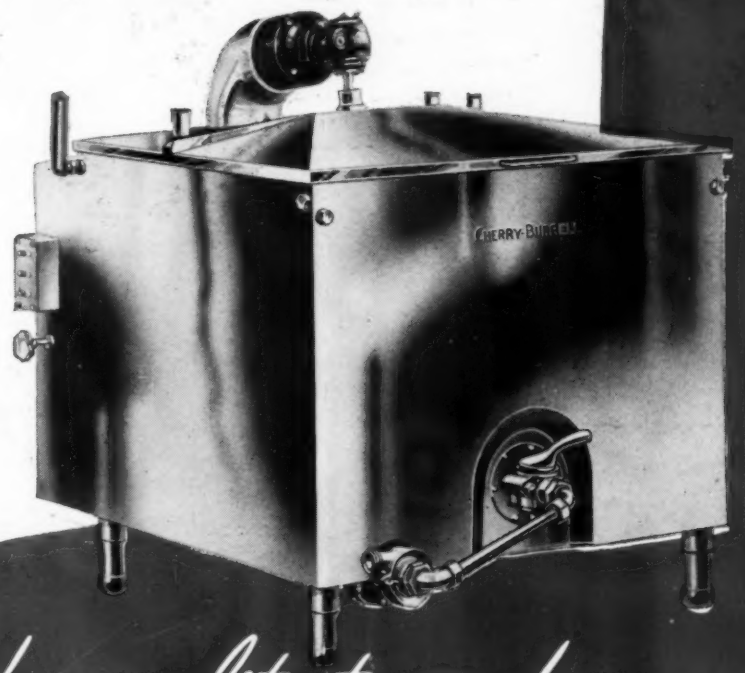
Dairy Short Courses—University of Georgia Dairy Department, Athens, Ga., November 18-19 and January 15-16.

Ontario Milk Distributor's Association—Annual Convention November 29 and 30, General Brock Hotel, Niagara Falls, Ontario, Canada.

American Butter Institute—Annual convention November 19 and 20, at the Congress Hotel, Chicago, Ill. Russell Pifer, executive secretary, 110 N. Franklin St., Chicago 6, Ill.

Washington State Milk Dealers Association, Washington State Ice Cream Manufacturers Association and Washington State Creamery Operators—Annual Conclave at Vancouver, B. C., November 19-21, inclusive.

The Spray F Pasteurizer



It takes quality to produce quality

Here is the De Luxe Spray F Pasteurizer.

Note the exclusive square shape to fit in corners or against walls, and the clean lines that mean a clean machine — and easy cleaning! Also available is the standard model with copper-bearing steel exterior and paint finish.

Rich, natural flavor and a deep cream layer are the marks of a quality product—the marks of pasteurized milk produced by the spray principle of the matchless Cherry-Burrell Spray F Pasteurizer.

Inside the gleaming stainless steel you'll find the ultimate in efficiency. The water is sprayed in a continuous sheet over the outer surface of the inner lining. The result—fast, uniform heat transfer at lower water temperature . . . no burning, scorching, or overheated portions. With the exclusive Sentinel Control, temperature is *automatically* started, regulated, stopped and recorded, giving uniformly maximum quality to every batch.

Get the details now from your Cherry-Burrell representative. Think now of making the Spray F Pasteurizer an integral part of *your* operations.

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General Sales and Executive Office:

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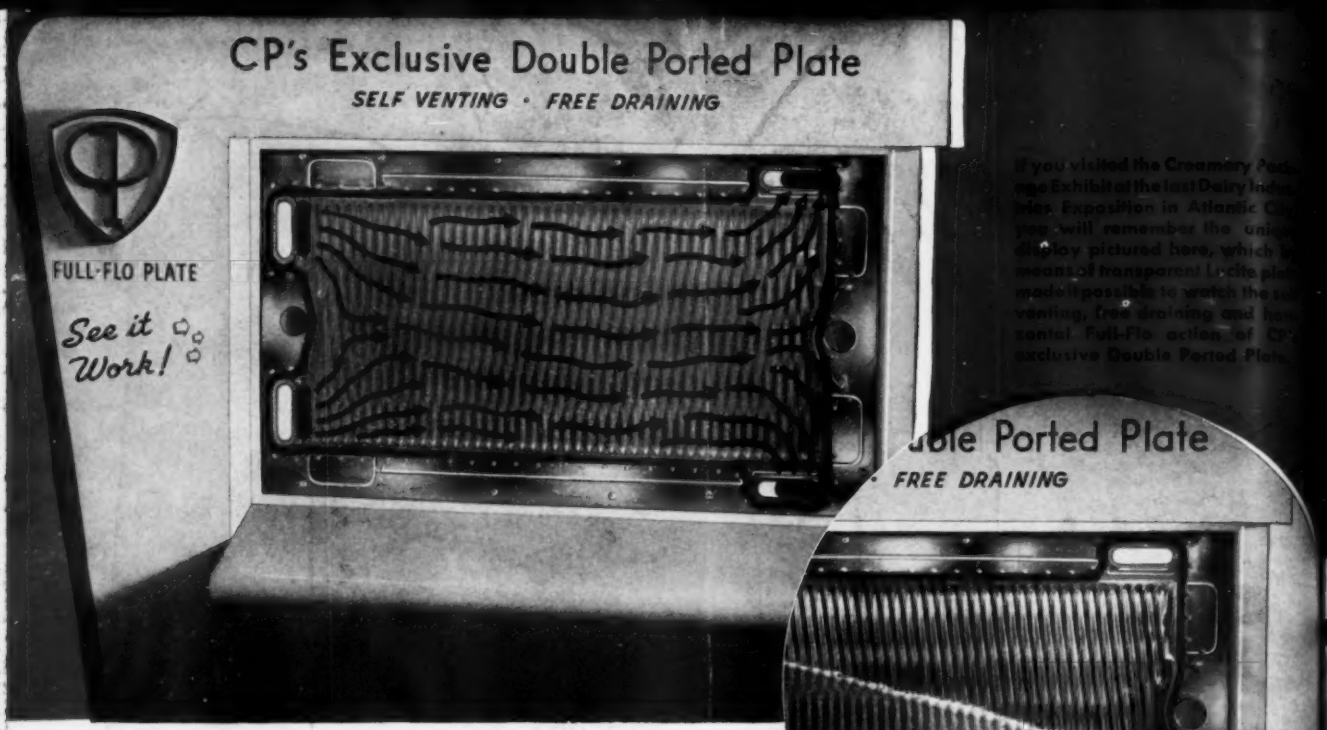
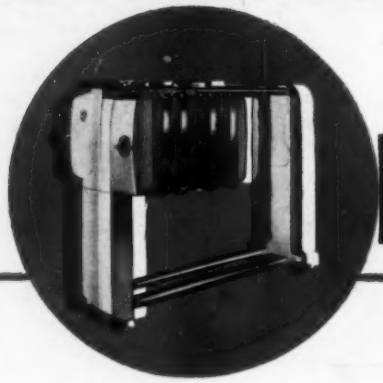
DEALERS TO SERVE THE DAIRY INDUSTRY





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Whether you are a present or prospective user of CP Full-Flo Plate Equipment, the performance advantages of CP's Exclusive Double Ported Plate are of vital importance to you. Here's why—

1. SELF VENTING FEATURE quickly eliminates air at the start of the run, avoids entrapping air during the run, and prevents air pockets which encourage milkstone formation.

2. FREE DRAINING FEATURE makes it possible to save all the product (particularly important with cream), and provides rapid draining of the unit between runs without taking press apart.

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